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Tide Tables 1987 HIGH AND LOW WATER PREDICTIONS

West Coast of North and South America

Including the Hawaiian Islands

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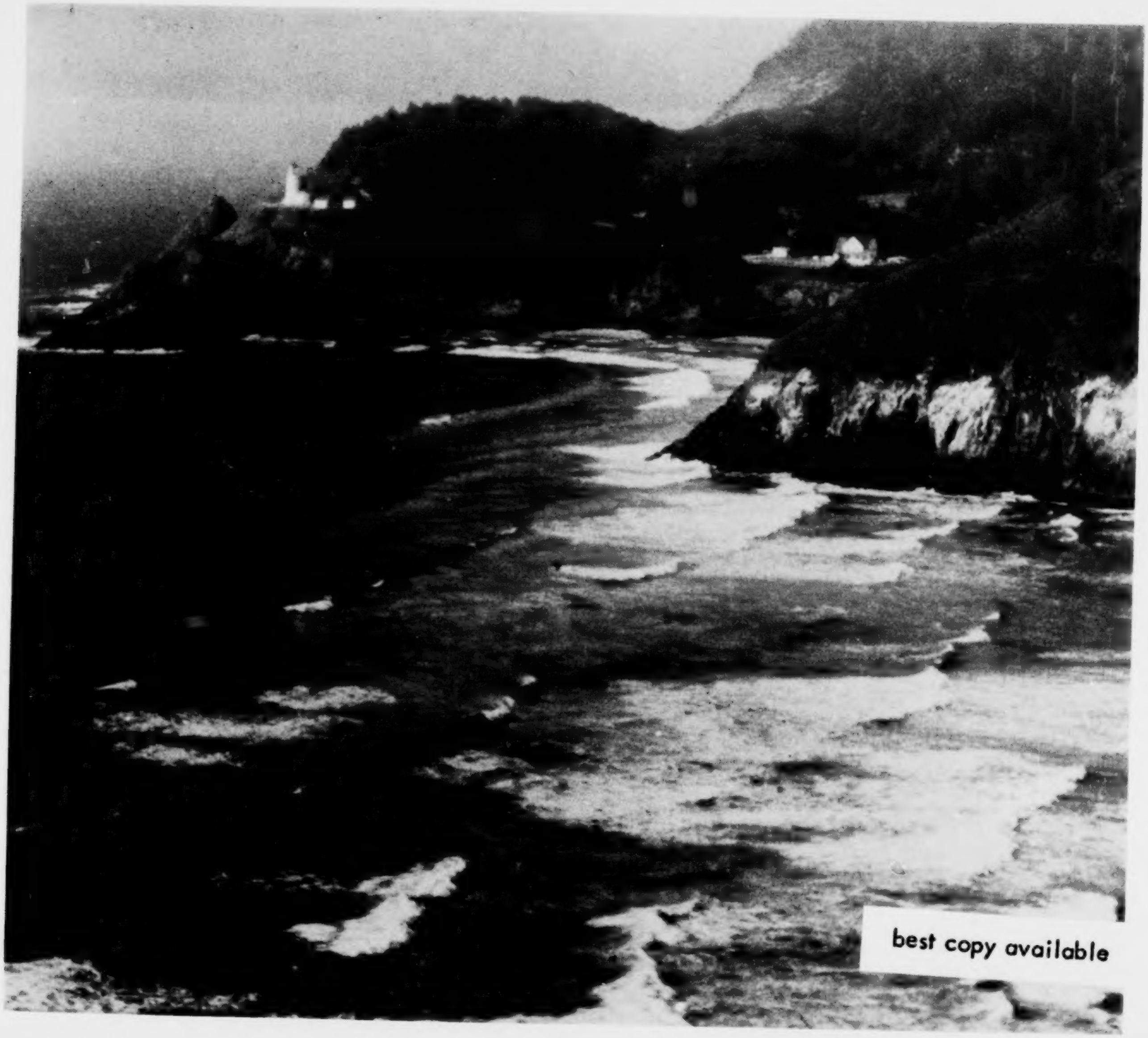

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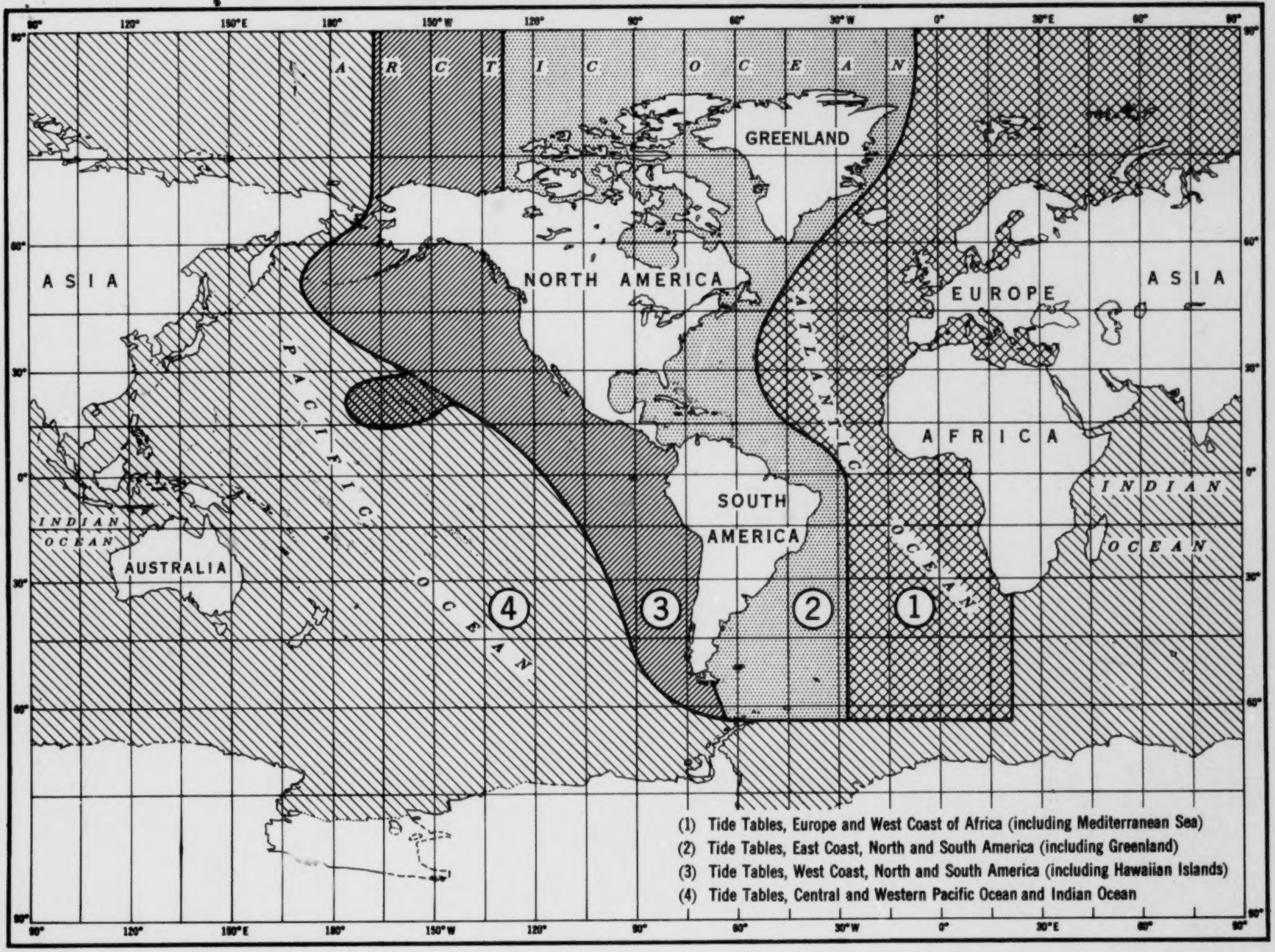
INDEX OF TIDE TABLE COVERAGE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(1) Tide Tables, Europe and West Coast of Africa (including Mediterranean Sea)
(2) Tide Tables, East Coast, North and South America (including Greenland)
(3) Tide Tables, West Coast, North and South America (including Hawaiian Islands)
(4) Tide Tables, Central and Western Pacific Ocean and Indian Ocean

Tide Tables 1987
HIGH AND LOW WATER PREDICTIONS

West Coast of North and South America

Including the Hawaiian Islands

Issued 1986

READEX
FICHE

U.S. DEPARTMENT OF COMMERCE
Malcolm Baldrige, Secretary

National Oceanic and Atmospheric Administration
Anthony J. Calio, Administrator

National Ocean Service
Paul M. Wolff, Assistant Administrator

Tide Tables, Tidal Current Tables, Tidal Current Charts, United States Coast Pilots, Distance Tables, and Nautical Charts are for sale by the National Ocean Service, Rockville, MD 20852. A list of other sales agents appears semiannually in the Notice to Mariners, published weekly by the Defense Mapping Agency Hydrographic Center or may be obtained on request from the National Ocean Service.

Corrections to this publication, after the date of printing, may appear in the quarterly summaries numbered 13, 26, 39, and 52 of the Notice to Mariners. They may also appear in the Local Notice to Mariners published weekly by the various United States Coast Guard Districts.

CONTENTS

Page
Index map of tide table coverage .... inside front cover
Astronomical data .... inside back cover
Important notices IV
Introduction V
List of reference stations VI

Table 1.—Daily tide predictions.
Explanation of table 1
Typical tide curves for United States ports 3
Daily predictions for reference stations 4

Table 2.—Tidal differences and other constants.
Explanation of table 165
Tidal differences and other constants 167

Table 3.—Height of tide at any time.
Explanation of table 189
Height of tide at any time 191

Table 4.—Local mean time of sunrise and sunset.
Explanation of table 193
Sunrise and sunset 194

Table 5.—Reduction of local mean time to standard time 203

Table 6.—Moonrise and moonset.
Explanation of table 205
Moonrise and moonset 206

Table 7.—Conversion of feet to meters 213

List of publications by the National Ocean Service relating to tides and tidal currents 215
Glossary of terms 217
Index to stations 223

IMPORTANT NOTICES

For the most part, tide predictions for U.S. reference stations are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights should be considered those expected under average weather conditions. The mariner must be cautioned that during times when weather conditions differ from what is considered average for the area, corresponding differences between predicted levels and those actually observed will be noted. Generally, prolonged onshore winds or a low barometric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted.

Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges may be expected near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides) and increased ranges when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range will depend upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, it would be prudent for the mariner to keep closely advised by local weather forecasts as they relate to the effects upon the tide levels.

INTRODUCTION

Tide tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1853. For a number of years these tables appeared as appendixes to the annual reports of the Superintendent of the Survey, and consisted of more or less elaborated means for enabling the mariner to make his own prediction of tides as occasion arose.

The first tables to give predictions for each day were those for the year 1867. They gave the times and heights of high waters only and were published in two separate parts, one for the Atlantic coast and the other for the Pacific coast of the United States. Together they contained daily predictions for 19 stations and tidal differences for 124 stations. A few years later predictions for the low waters were also included, and for the year 1896 the tables were extended to include the entire maritime world, with full predictions for 70 ports and tidal differences for about 3,000 stations.

The tidal tables are now issued in four volumes, as follows: *Europe and West Coast of Africa (including the Mediterranean Sea); East Coast of North and South America (including Greenland); West Coast of North and South America (including the Hawaiian Islands); Central and Western Pacific Ocean and Indian Ocean.* Together, they contain daily predictions for 198 reference ports and differences and other constants for about 6,000 stations.

This edition of the *Tide Tables, West Coast of North and South America* contains full daily predictions for 40 reference ports and differences and other constants for about 1,100 stations in North America, South America, and the Hawaiian Islands. It also contains a table for obtaining the approximate height of the tide at any time, a table of local mean time of sunrise and sunset for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table of moonrise and moonset for 6 places, a table of the Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices, and a glossary of terms.

Up to and including the tide tables for the year 1884, all the tide predictions were computed by means of auxiliary tables and curves constructed from the results of tide observations at the different ports. From 1885 to 1911, inclusive, the predictions were generally made by means of the Ferrel tide-predicting machine. From 1912 to 1965, inclusive, they were made by means of the Coast and Geodetic Survey tide predicting machine No. 2. Since 1966, predictions have been made by electronic computer.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results, and as further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the Assistant Administrator, National Ocean Service, Rockville, MD 20852, U.S.A.

In accordance with cooperative arrangements for the exchange of tide predictions, the authorities named below have furnished predictions for the following stations in this issue:

Canadian Hydrographic Service.—Victoria and Vancouver, B.C.

Instituto Hidrografico de la Armada, Chile.—Antofagasta, Cabo de Hornos, Puerto Montt, Punta Arenas, and Valparaiso.

LIST OF REFERENCE STATIONS

Name of station	*Datum below mean sea-level*	*Page*	*Name of station*	*Datum below mean sea-level*	*Page*
Aberdeen, Washington	5.6	84	Matarani, Peru	1.4	24
Anchorage, Alaska	16.0	132	Nikishka, Alaska	11.2	128
Antofagasta, Chile	2.6	20	Nushagak Bay, Alaska	10.3	152
Astoria, Oregon	*4.4	80	Port Townsend, Washington	4.9	88
Balboa, Panama	8.4	44	Puerto Montt, Chile	11.8	12
Buenaventura, Colombia	6.5	40	Punta Arenas, Chile	4.0	8
Callao, Peru	1.7	28	Puntarenas, Costa Rica	4.6	48
Cabo de Hornos, Chile	4.4	4	St. Michael, Alaska	2.0	156
Cordova, Alaska	6.7	116	Salina Cruz, Mexico	1.9	56
Dutch Harbor, Alaska	2.2	140	San Diego, California	2.9	64
Guayaquil, Ecuador	*6.3	36	San Francisco, California	3.1	72
Guaymas, Mexico	1.5	60	Seattle, Washington	6.6	92
Honolulu, Hawaii	0.8	160	Seldovia, Alaska	9.5	124
Humboldt Bay, California	3.7	76	Sitka, Alaska	5.2	112
Juneau, Alaska	8.5	108	Sweeper Cove, Alaska	2.1	144
Ketchikan, Alaska	8.0	104	Talara, Peru	2.6	32
Kodiak, Alaska	4.3	136	Valdez, Alaska	6.4	120
La Union, El Salvador	5.1	52	Valparaiso, Chile	3.0	16
Los Angeles, California	2.8	68	Vancouver, British Columbia	10.0	100
Massacre Bay, Alaska	1.9	148	Victoria, British Columbia	6.1	96

* Datum below mean river level.

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1 were calculated.

Local mean sea level datum should not be confused with the National Geodetic Vertical Datum which is the datum of the geodetic level net of the United States. Relationships between geodetic and local tidal datums are published in connection with the tidal bench mark data of the National Ocean Service.

TABLE 1.—DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as *reference stations.* By using tidal differences from table 2, one can calculate the approximate times and heights of the tide at many other places which are called *subordinate stations.* Instructions on the use of the tidal differences are found in the explanation of table 2.

High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by the comparison of consecutive heights. Because of diurnal inequality at certain places, however, there may be a difference of only a few tenths of a foot between one high water and low water of a day, but a marked difference in height between the other high water and low water. It is essential, therefore, in using the tide tables to note carefully the heights as well as the times of the tides.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page. Daylight saving time is not used in this publication.

Datum.—The datum from which the predicted heights are reckoned is the same as that used for the charts of the locality. The datum for the Pacific coast of the United States (including Hawaii and Alaska) is the mean of the lower of the two low waters of each day. For foreign coasts a datum approximating to mean low water springs, Indian spring low water, or the lowest possible low water is generally used. The depression of the datum below mean sea level for each of the reference stations of this volume is given on the preceding page.

Depth of water.—The nautical charts published by the United States and other maritime nations show the depth of water as referred to a low water datum corresponding to that from which the predicted tidal heights are reckoned. To find the actual depth of water at any time the height of the tide should be added to the charted depth. If the height of the tide is negative—that is, if there is a minus sign (−) before the tabular height—it should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and following tides, or table 3 may be used. The reference stations in table 1 now contain the heights in meters as well as feet.

Variation in sea level.—Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

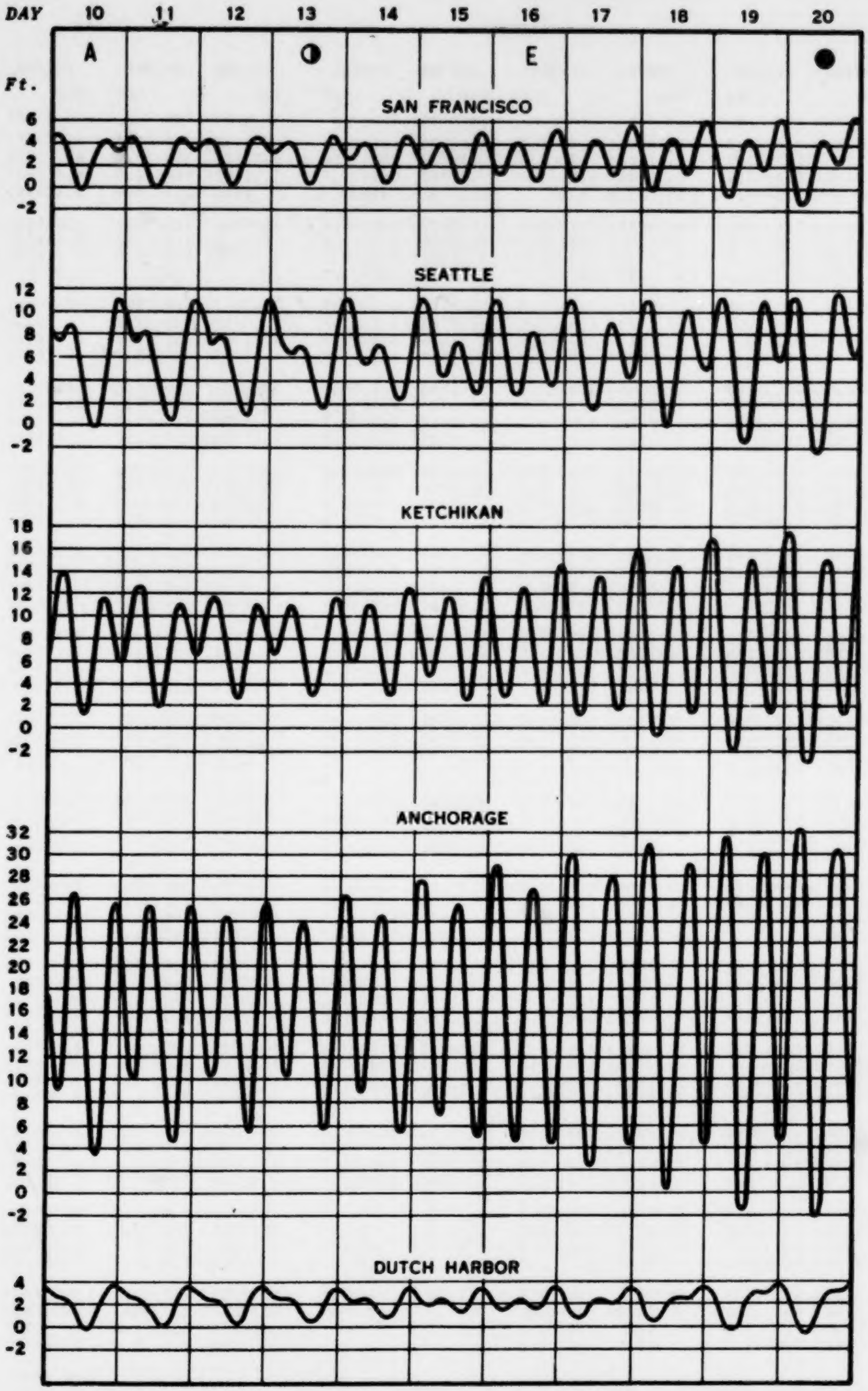
At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

Number of tides.—There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus on certain days of each month only a single high or a single low water occurs. At some stations, during portions of each month, the tide becomes diurnal—that is, only one high and one low water will occur during the period of a lunar day.

Relation of tide to current.—In using these tables of tide predictions it must be borne in mind that they give the times and heights of high and low waters and not the times of turning of the current or slack water. For stations on the outer coast there is usually but little difference between the time of high or low water and the beginning of ebb or flood current, but for places in narrow channels, landlocked harbors, or on tidal rivers, the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted times of slack water, and other current data, reference should be made to the tidal current tables published by the National Ocean Service in two separate volumes, one for the Atlantic coast of North America and the other for the Pacific coast of North America and Asia.

Typical tide curves.—The variations in the tide from day to day and from place to place are illustrated on the opposite page by the tide curves for representative ports along the Pacific coast of the United States. It will be noted that one of the chief characteristics of the tide in this region is diurnal inequality, i.e., the difference in heights of successive high waters or low waters. The largest inequality is in the low waters although at Seattle there is also considerable difference between the two high waters on certain days. The importance of this inequality at Seattle is brought out by the curve which shows that at times the two high waters of a day differ by over 4 feet and the two low waters differ by more than 8 feet. At Ketchikan and Anchorage the inequality is less pronounced because of the large range of tide. In these localities the principal variations in the tide follow the changes in the Moon's phase and distance. The tide at Anchorage is one of the largest in the world. At Dutch Harbor the type of tide is such that it is semidiurnal around the times the Moon is on the Equator, but becomes diurnal around the times of maximum north or south declination of the Moon.

TYPICAL TIDE CURVES FOR UNITED STATES PORTS



A discussion of these curves is given on the preceding page.

Lunar data: A - Moon in apogee
◑ - last quarter
E - Moon on Equator
● - new Moon

CABO de HORNOS, CHILE, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0436	8.4	2.6	16	0454	7.1	2.2
Th	1136	0.4	0.1	F	1200	1.7	0.5
	1754	5.6	1.7		1812	5.0	1.5
	2300	2.7	0.8		2312	3.3	1.0
2	0530	8.4	2.6	17	0536	7.1	2.2
F	1230	0.4	0.1	Sa	1236	1.7	0.5
	1842	5.7	1.7		1848	5.1	1.6
	2359	2.6	0.8		2348	3.3	1.0
3	0624	8.3	2.5	18	0612	6.9	2.1
Sa	1324	0.5	0.2	Su	1312	1.8	0.5
	1936	5.8	1.8		1924	5.2	1.6
4	0100	2.5	0.8	19	0030	3.3	1.0
Su	0718	7.9	2.4	M	0654	6.8	2.1
	1412	0.8	0.3		1342	1.9	0.6
	2030	6.0	1.8		2000	5.3	1.6
5	0206	2.5	0.8	20	0118	3.2	1.0
M	0818	7.4	2.3	Tu	0736	6.5	2.0
	1500	1.2	0.4		1418	2.1	0.6
	2118	6.2	1.9		2036	5.5	1.7
6	0306	2.5	0.8	21	0212	3.1	1.0
Tu	0918	6.9	2.1	W	0818	6.2	1.9
	1548	1.6	0.5		1454	2.3	0.7
	2212	6.3	1.9		2112	5.8	1.8
7	0412	2.5	0.8	22	0306	3.0	0.9
W	1018	6.3	1.9	Th	0912	5.9	1.8
	1636	2.1	0.6		1530	2.5	0.8
	2300	6.5	2.0		2154	6.1	1.9
8	0524	2.4	0.7	23	0412	2.7	0.8
Th	1118	5.7	1.7	F	1012	5.6	1.7
	1724	2.5	0.8		1612	2.7	0.8
	2348	6.6	2.0		2242	6.5	2.0
9	0630	2.3	0.7	24	0518	2.4	0.7
F	1224	5.3	1.6	Sa	1124	5.3	1.6
	1806	2.9	0.9		1654	2.9	0.9
					2330	6.9	2.1
10	0036	6.7	2.1	25	0624	2.0	0.6
Sa	0730	2.1	0.7	Su	1230	5.2	1.6
	1330	5.1	1.5		1754	3.0	0.9
	1854	3.1	1.0				
11	0124	6.8	2.1	26	0030	7.3	2.2
Su	0830	2.0	0.6	M	0730	1.6	0.5
	1430	5.0	1.5		1342	5.2	1.6
	1942	3.3	1.0		1848	3.0	0.9
12	0206	6.9	2.1	27	0124	7.6	2.3
M	0918	1.9	0.6	Tu	0836	1.2	0.4
	1524	4.9	1.5		1442	5.2	1.6
	2024	3.4	1.0		1948	3.0	0.9
13	0254	7.0	2.1	28	0224	8.0	2.4
Tu	1000	1.8	0.5	W	0930	0.9	0.3
	1612	4.9	1.5		1542	5.3	1.6
	2106	3.4	1.0		2054	2.8	0.9
14	0336	7.0	2.1	29	0324	8.2	2.5
W	1042	1.7	0.5	Th	1024	0.7	0.2
	1654	4.9	1.5		1636	5.5	1.7
	2148	3.4	1.0		2154	2.6	0.8
15	0418	7.1	2.2	30	0418	8.3	2.5
Th	1124	1.7	0.5	F	1118	0.6	0.2
	1730	5.0	1.5		1730	5.7	1.8
	2230	3.4	1.0		2248	2.5	0.8
				31	0512	8.2	2.5
				Sa	1206	0.7	0.2
					1818	6.0	1.8
					2348	2.3	0.7

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0612	7.9	2.4	16	0548	6.8	2.1
Su	1254	1.0	0.3	M	1230	2.0	0.6
	1906	6.2	1.9		1842	5.6	1.7
2	0048	2.3	0.7	17	0018	3.0	0.9
M	0706	7.5	2.3	Tu	0630	6.6	2.0
	1342	1.3	0.4		1306	2.2	0.7
	1954	6.4	1.9		1918	5.9	1.8
3	0148	2.3	0.7	18	0106	2.8	0.9
Tu	0800	7.0	2.1	W	0718	6.3	1.9
	1424	1.7	0.5		1336	2.4	0.7
	2042	6.5	2.0		1954	6.1	1.9
4	0254	2.3	0.7	19	0200	2.7	0.8
W	0900	6.4	1.9	Th	0806	6.0	1.8
	1512	2.2	0.7		1412	2.7	0.8
	2130	6.6	2.0		2030	6.4	1.9
5	0354	2.3	0.7	20	0300	2.5	0.8
Th	1000	5.8	1.8	F	0906	5.6	1.7
	1554	2.6	0.8		1454	2.9	0.9
	2218	6.7	2.0		2118	6.6	2.0
6	0500	2.3	0.7	21	0400	2.2	0.7
F	1100	5.4	1.6	Sa	1012	5.4	1.6
	1642	3.0	0.9		1536	3.1	0.9
	2306	6.7	2.0		2212	6.9	2.1
7	0600	2.2	0.7	22	0506	2.0	0.6
Sa	1206	5.1	1.6	Su	1118	5.2	1.6
	1730	3.3	1.0		1630	3.2	1.0
	2354	6.7	2.1		2306	7.2	2.2
8	0700	2.2	0.7	23	0612	1.7	0.5
Su	1306	4.9	1.5	M	1224	5.2	1.6
	1818	3.4	1.1		1736	3.2	1.0
9	0048	6.8	2.1	24	0012	7.5	2.3
M	0800	2.1	0.6	Tu	0718	1.4	0.4
	1406	4.9	1.5		1330	5.2	1.6
	1906	3.5	1.1		1836	3.1	1.0
10	0136	6.8	2.1	25	0112	7.7	2.4
Tu	0848	2.0	0.6	W	0818	1.2	0.4
	1454	4.9	1.5		1430	5.4	1.6
	1954	3.5	1.1		1942	3.0	0.9
11	0218	6.9	2.1	26	0212	8.0	2.4
W	0930	1.9	0.6	Th	0912	1.0	0.3
	1536	5.0	1.5		1524	5.6	1.7
	2036	3.4	1.0		2042	2.7	0.8
12	0306	7.0	2.1	27	0312	8.1	2.5
Th	1012	1.9	0.6	F	1006	1.0	0.3
	1618	5.0	1.5		1612	5.9	1.8
	2124	3.3	1.0		2142	2.5	0.8
13	0348	7.1	2.2	28	0406	8.0	2.4
F	1048	1.9	0.6	Sa	1054	1.1	0.3
	1654	5.2	1.6		1700	6.2	1.9
	2206	3.2	1.0		2242	2.2	0.7
14	0430	7.1	2.2				
Sa	1124	1.9	0.6				
	1730	5.3	1.6				
	2248	3.1	1.0				
15	0512	7.0	2.1				
Su	1200	1.9	0.6				
	1806	5.4	1.7				
	2330	3.1	0.9				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0500	7.8	2.4	16	0442	6.8	2.1
Su	1136	1.3	0.4	M	1112	2.3	0.7
	1742	6.4	2.0		1718	6.1	1.9
	2336	2.1	0.6		2312	2.7	0.8
2	0554	7.4	2.3	17	0530	6.6	2.0
M	1218	1.6	0.5	Tu	1142	2.4	0.7
	1830	6.6	2.0		1754	6.3	1.9
3	0036	2.0	0.6	18	0006	2.5	0.8
Tu	0648	6.9	2.1	W	0612	6.3	1.9
	1300	2.0	0.6		1218	2.6	0.8
	1912	6.8	2.1		1830	6.6	2.0
4	0130	2.0	0.6	19	0054	2.3	0.7
W	0742	6.4	2.0	Th	0706	6.0	1.8
	1342	2.4	0.7		1254	2.9	0.9
	2000	6.8	2.1		1912	6.8	2.1
5	0230	2.1	0.6	20	0148	2.1	0.6
Th	0836	5.9	1.8	F	0806	5.7	1.8
	1430	2.9	0.9		1336	3.1	1.0
	2048	6.8	2.1		2000	7.0	2.1
6	0330	2.1	0.7	21	0248	2.0	0.6
F	0936	5.5	1.7	Sa	0906	5.5	1.7
	1512	3.2	1.0		1424	3.3	1.0
	2136	6.8	2.1		2048	7.1	2.2
7	0430	2.2	0.7	22	0354	1.8	0.6
Sa	1042	5.2	1.6	Su	1012	5.3	1.6
	1600	3.5	1.1		1518	3.4	1.1
	2224	6.7	2.0		2148	7.3	2.2
8	0530	2.2	0.7	23	0500	1.7	0.5
Su	1142	5.1	1.5	M	1118	5.2	1.6
	1648	3.7	1.1		1624	3.5	1.1
	2318	6.7	2.0		2254	7.4	2.3
9	0630	2.2	0.7	24	0606	1.5	0.5
M	1242	5.0	1.5	Tu	1224	5.3	1.6
	1742	3.7	1.1		1730	3.4	1.0
					2359	7.6	2.3
10	0006	6.7	2.0	25	0706	1.4	0.4
Tu	0718	2.2	0.7	W	1318	5.5	1.7
	1336	5.0	1.5		1836	3.1	1.0
	1836	3.7	1.1				
11	0100	6.8	2.1	26	0100	7.7	2.3
W	0806	2.2	0.7	Th	0800	1.3	0.4
	1418	5.1	1.6		1412	5.8	1.8
	1924	3.5	1.1		1942	2.9	0.9
12	0148	6.9	2.1	27	0200	7.7	2.4
Th	0848	2.1	0.6	F	0848	1.4	0.4
	1454	5.2	1.6		1500	6.1	1.9
	2012	3.4	1.0		2042	2.5	0.8
13	0236	6.9	2.1	28	0300	7.6	2.3
F	0930	2.1	0.6	Sa	0936	1.5	0.5
	1536	5.4	1.6		1542	6.5	2.0
	2100	3.2	1.0		2136	2.3	0.7
14	0318	7.0	2.1	29	0354	7.4	2.3
Sa	1006	2.1	0.6	Su	1018	1.7	0.5
	1612	5.6	1.7		1630	6.8	2.1
	2142	3.0	0.9		2230	2.0	0.6
15	0400	6.9	2.1	30	0442	7.1	2.2
Su	1036	2.1	0.7	M	1100	2.0	0.6
	1642	5.8	1.8		1712	7.0	2.1
	2230	2.8	0.9		2324	1.9	0.6
				31	0536	6.7	2.0
				Tu	1142	2.4	0.7
					1754	7.1	2.2

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CABO de HORNOS, CHILE, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0018	1.9	0.6	16	0600	6.1	1.9
W	0630	6.3	1.9	Th	1136	3.0	0.9
	1218	2.8	0.8		1754	7.3	2.2
	1830	7.1	2.2				
2	0112	1.9	0.6	17	0042	1.7	0.5
Th	0724	5.9	1.8	F	0654	5.8	1.8
	1300	3.1	1.0		1218	3.2	1.0
	1918	7.0	2.1		1842	7.4	2.3
3	0206	2.0	0.6	18	0136	1.6	0.5
F	0818	5.5	1.7	Sa	0754	5.6	1.7
	1342	3.5	1.1		1306	3.4	1.0
	2000	6.9	2.1		1930	7.5	2.3
4	0300	2.1	0.6	19	0242	1.5	0.5
Sa	0918	5.3	1.6	Su	0900	5.4	1.7
	1424	3.7	1.1		1400	3.6	1.1
	2048	6.8	2.1		2030	7.5	2.3
5	0354	2.2	0.7	20	0342	1.5	0.5
Su	1018	5.1	1.6	M	1006	5.4	1.7
	1518	3.9	1.2		1506	3.6	1.1
	2142	6.7	2.0		2136	7.5	2.3
6	0454	2.3	0.7	21	0448	1.5	0.5
M	1118	5.1	1.5	Tu	1112	5.5	1.7
	1612	4.0	1.2		1618	3.5	1.1
	2236	6.6	2.0		2242	7.5	2.3
7	0548	2.3	0.7	22	0548	1.5	0.5
Tu	1212	5.1	1.6	W	1212	5.7	1.7
	1706	3.9	1.2		1730	3.3	1.0
	2330	6.6	2.0		2348	7.4	2.3
8	0642	2.3	0.7	23	0642	1.5	0.5
W	1254	5.2	1.6	Th	1300	6.0	1.8
	1806	3.8	1.2		1836	3.1	0.9
9	0024	6.7	2.0	24	0048	7.4	2.3
Th	0724	2.3	0.7	F	0736	1.6	0.5
	1336	5.3	1.6		1348	6.4	1.9
	1900	3.6	1.1		1942	2.7	0.8
10	0112	6.7	2.1	25	0148	7.2	2.2
F	0806	2.3	0.7	Sa	0818	1.8	0.6
	1412	5.6	1.7		1436	6.7	2.1
	1948	3.3	1.0		2036	2.4	0.7
11	0200	6.7	2.1	26	0248	7.0	2.1
Sa	0842	2.3	0.7	Su	0906	2.0	0.6
	1448	5.9	1.8		1518	7.1	2.2
	2036	3.1	0.9		2136	2.1	0.6
12	0248	6.7	2.1	27	0342	6.7	2.1
Su	0912	2.3	0.7	M	0942	2.3	0.7
	1524	6.2	1.9		1554	7.3	2.2
	2124	2.7	0.8		2224	1.8	0.6
13	0330	6.6	2.0	28	0430	6.4	2.0
M	0948	2.4	0.7	Tu	1024	2.6	0.8
	1600	6.5	2.0		1636	7.4	2.3
	2206	2.4	0.7		2312	1.7	0.5
14	0418	6.5	2.0	29	0524	6.1	1.9
Tu	1024	2.6	0.8	W	1100	3.0	0.9
	1636	6.8	2.1		1712	7.4	2.3
	2300	2.1	0.7		2359	1.7	0.5
15	0506	6.3	1.9	30	0612	5.8	1.8
W	1100	2.8	0.9	Th	1136	3.3	1.0
	1712	7.1	2.2		1754	7.3	2.2
	2348	1.9	0.6				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0048	1.8	0.6	16	0030	1.2	0.4
F	0706	5.5	1.7	Sa	0642	5.7	1.7
	1212	3.6	1.1		1148	3.3	1.0
	1836	7.2	2.2		1818	8.1	2.5
2	0136	1.9	0.6	17	0124	1.1	0.4
Sa	0754	5.3	1.6	Su	0742	5.6	1.7
	1254	3.8	1.2		1248	3.4	1.1
	1918	7.0	2.1		1912	8.0	2.4
3	0230	2.1	0.6	18	0224	1.2	0.4
Su	0848	5.2	1.6	M	0848	5.5	1.7
	1336	4.0	1.2		1348	3.5	1.1
	2006	6.9	2.1		2018	7.9	2.4
4	0318	2.3	0.7	19	0324	1.3	0.4
M	0948	5.1	1.6	Tu	0948	5.6	1.7
	1430	4.1	1.3		1500	3.5	1.1
	2054	6.7	2.0		2118	7.6	2.3
5	0412	2.4	0.7	20	0430	1.5	0.5
Tu	1042	5.1	1.6	W	1048	5.8	1.8
	1524	4.1	1.3		1612	3.4	1.1
	2148	6.6	2.0		2230	7.4	2.3
6	0506	2.4	0.7	21	0524	1.6	0.5
W	1130	5.2	1.6	Th	1148	6.1	1.9
	1630	4.1	1.2		1730	3.2	1.0
	2248	6.5	2.0		2336	7.1	2.2
7	0554	2.5	0.8	22	0618	1.8	0.6
Th	1218	5.4	1.6	F	1236	6.5	2.0
	1730	3.9	1.2		1836	2.9	0.9
	2342	6.5	2.0				
8	0636	2.5	0.8	23	0042	6.8	2.1
F	1254	5.6	1.7	Sa	0706	2.1	0.6
	1830	3.6	1.1		1324	6.9	2.1
					1942	2.5	0.8
9	0036	6.4	2.0	24	0142	6.6	2.0
Sa	0712	2.5	0.8	Su	0748	2.3	0.7
	1330	6.0	1.8		1406	7.2	2.2
	1924	3.2	1.0		2036	2.2	0.7
10	0130	6.4	2.0	25	0236	6.3	1.9
Su	0748	2.6	0.8	M	0830	2.6	0.8
	1406	6.4	2.0		1448	7.5	2.3
	2012	2.8	0.9		2130	1.9	0.6
11	0218	6.3	1.9	26	0330	6.1	1.9
M	0824	2.6	0.8	Tu	0912	2.9	0.9
	1442	6.8	2.1		1530	7.6	2.3
	2100	2.4	0.7		2218	1.7	0.5
12	0312	6.3	1.9	27	0424	5.8	1.8
Tu	0900	2.7	0.8	W	0948	3.1	1.0
	1518	7.2	2.2		1606	7.6	2.3
	2154	1.9	0.6		2300	1.7	0.5
13	0400	6.2	1.9	28	0512	5.7	1.7
W	0936	2.9	0.9	Th	1024	3.4	1.0
	1600	7.5	2.3		1642	7.6	2.3
	2242	1.6	0.5		2342	1.7	0.5
14	0454	6.0	1.8	29	0554	5.5	1.7
Th	1018	3.0	0.9	F	1100	3.6	1.1
	1642	7.8	2.4		1724	7.5	2.3
	2330	1.3	0.4				
15	0548	5.9	1.8	30	0030	1.8	0.6
F	1100	3.2	1.0	Sa	0642	5.3	1.6
	1724	8.0	2.4		1136	3.7	1.1
					1800	7.3	2.2
				31	0112	1.9	0.6
				Su	0730	5.2	1.6
					1212	3.9	1.2
					1842	7.2	2.2

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0154	2.1	0.6	16	0206	1.1	0.3
M	0818	5.1	1.6	Tu	0824	5.8	1.8
	1254	4.0	1.2		1336	3.2	1.0
	1924	7.0	2.1		2000	8.0	2.4
2	0242	2.3	0.7	17	0300	1.3	0.4
Tu	0906	5.1	1.6	W	0918	5.9	1.8
	1342	4.1	1.3		1448	3.2	1.0
	2012	6.8	2.1		2106	7.5	2.3
3	0330	2.4	0.7	18	0400	1.6	0.5
W	0954	5.2	1.6	Th	1018	6.2	1.9
	1442	4.1	1.3		1600	3.2	1.0
	2100	6.6	2.0		2212	7.0	2.1
4	0412	2.5	0.8	19	0454	2.0	0.6
Th	1042	5.3	1.6	F	1118	6.5	2.0
	1548	4.1	1.3		1718	3.0	0.9
	2200	6.4	1.9		2318	6.6	2.0
5	0500	2.6	0.8	20	0542	2.3	0.7
F	1124	5.5	1.7	Sa	1206	6.9	2.1
	1654	3.9	1.2		1830	2.7	0.8
	2300	6.2	1.9				
6	0536	2.7	0.8	21	0030	6.2	1.9
Sa	1206	5.9	1.8	Su	0630	2.6	0.8
	1800	3.5	1.1		1254	7.2	2.2
	2359	6.0	1.8		1936	2.3	0.7
7	0618	2.8	0.9	22	0130	5.9	1.8
Su	1242	6.3	1.9	M	0718	2.9	0.9
	1900	3.1	0.9		1342	7.4	2.3
					2030	2.0	0.6
8	0100	6.0	1.8	23	0230	5.7	1.8
M	0700	2.9	0.9	Tu	0800	3.1	1.0
	1324	6.8	2.1		1424	7.6	2.3
	1954	2.6	0.8		2118	1.8	0.6
9	0154	5.9	1.8	24	0324	5.6	1.7
Tu	0736	2.9	0.9	W	0842	3.3	1.0
	1400	7.3	2.2		1506	7.6	2.3
	2048	2.0	0.6		2206	1.7	0.5
10	0248	5.9	1.8	25	0412	5.5	1.7
W	0818	3.0	0.9	Th	0918	3.4	1.0
	1448	7.7	2.4		1542	7.7	2.3
	2136	1.5	0.5		2248	1.7	0.5
11	0348	5.9	1.8	26	0454	5.4	1.7
Th	0906	3.1	0.9	F	1000	3.5	1.1
	1530	8.1	2.5		1618	7.6	2.3
	2230	1.1	0.4		2324	1.7	0.5
12	0442	5.8	1.8	27	0536	5.4	1.6
F	0954	3.1	0.9	Sa	1036	3.6	1.1
	1618	8.4	2.6		1700	7.5	2.3
	2318	0.9	0.3				
13	0536	5.8	1.8	28	0006	1.8	0.6
Sa	1042	3.1	0.9	Su	0612	5.3	1.6
	1706	8.6	2.6		1112	3.7	1.1
					1736	7.4	2.3
14	0012	0.9	0.3	29	0042	1.9	0.6
Su	0630	5.7	1.8	M	0654	5.2	1.6
	1136	3.1	1.0		1148	3.7	1.1
	1800	8.5	2.6		1812	7.3	2.2
15	0106	0.9	0.3	30	0118	2.1	0.6
M	0724	5.7	1.8	Tu	0736	5.2	1.6
	1230	3.2	1.0		1224	3.8	1.2
	1900	8.3	2.5		1854	7.1	2.2

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CABO de HORNOS, CHILE, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0200	2.2	0.7	16	0230	1.5	0.5
W	0818	5.2	1.6	Th	0842	6.4	2.0
	1312	3.9	1.2		1430	2.8	0.9
	1936	6.8	2.1		2042	7.2	2.2
2	0236	2.4	0.7	17	0318	2.0	0.6
Th	0900	5.3	1.6	F	0942	6.6	2.0
	1406	3.9	1.2		1548	2.8	0.9
	2024	6.5	2.0		2148	6.5	2.0
3	0318	2.6	0.8	18	0412	2.4	0.7
F	0942	5.5	1.7	Sa	1036	6.8	2.1
	1506	3.9	1.2		1700	2.7	0.8
	2112	6.1	1.9		2300	6.0	1.8
4	0354	2.8	0.9	19	0500	2.8	0.9
Sa	1024	5.8	1.8	Su	1130	7.0	2.1
	1618	3.7	1.1		1812	2.5	0.8
	2218	5.8	1.8				
5	0436	3.0	0.9	20	0012	5.6	1.7
Su	1112	6.2	1.9	M	0554	3.1	1.0
	1730	3.3	1.0		1224	7.2	2.2
	2324	5.6	1.7		1918	2.2	0.7
6	0524	3.1	1.0	21	0124	5.4	1.7
M	1154	6.6	2.0	Tu	0648	3.4	1.0
	1836	2.9	0.9		1312	7.3	2.2
					2018	2.0	0.6
7	0036	5.5	1.7	22	0224	5.4	1.6
Tu	0612	3.2	1.0	W	0736	3.5	1.1
	1242	7.1	2.2		1400	7.4	2.3
	1936	2.3	0.7		2106	1.9	0.6
8	0136	5.5	1.7	23	0318	5.4	1.6
W	0700	3.2	1.0	Th	0818	3.5	1.1
	1330	7.6	2.3		1442	7.5	2.3
	2030	1.7	0.5		2148	1.8	0.5
9	0236	5.6	1.7	24	0354	5.4	1.6
Th	0748	3.2	1.0	F	0900	3.5	1.1
	1418	8.0	2.5		1524	7.5	2.3
	2124	1.3	0.4		2230	1.7	0.5
10	0330	5.7	1.7	25	0436	5.4	1.7
F	0842	3.1	0.9	Sa	0942	3.5	1.1
	1512	8.5	2.6		1600	7.5	2.3
	2212	0.9	0.3		2306	1.8	0.5
11	0424	5.8	1.8	26	0512	5.4	1.7
Sa	0936	3.0	0.9	Su	1018	3.4	1.1
	1606	8.7	2.7		1636	7.5	2.3
	2306	0.7	0.2		2336	1.8	0.6
12	0518	5.9	1.8	27	0542	5.4	1.7
Su	1030	2.8	0.9	M	1054	3.4	1.1
	1654	8.8	2.7		1718	7.4	2.3
	2354	0.7	0.2				
13	0606	6.0	1.8	28	0012	1.9	0.6
M	1124	2.8	0.8	Tu	0618	5.5	1.7
	1748	8.7	2.6		1130	3.4	1.1
					1754	7.3	2.2
14	0048	0.9	0.3	29	0042	2.1	0.6
Tu	0700	6.1	1.9	W	0654	5.5	1.7
	1224	2.8	0.8		1206	3.4	1.1
	1848	8.3	2.5		1830	7.0	2.1
15	0136	1.1	0.4	30	0118	2.3	0.7
W	0748	6.2	1.9	Th	0730	5.6	1.7
	1324	2.8	0.9		1254	3.5	1.1
	1942	7.8	2.4		1906	6.7	2.0
				31	0148	2.5	0.8
				F	0806	5.7	1.8
					1342	3.4	1.1
					1954	6.3	1.9

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0218	2.7	0.8	16	0324	2.9	0.9
Sa	0842	5.9	1.8	Su	0948	7.0	2.1
	1442	3.4	1.0		1636	2.4	0.7
	2042	5.9	1.8		2242	5.5	1.7
2	0254	3.0	0.9	17	0418	3.3	1.0
Su	0930	6.2	1.9	M	1042	6.9	2.1
	1548	3.2	1.0		1748	2.4	0.7
	2148	5.5	1.7		2354	5.2	1.6
3	0336	3.2	1.0	18	0512	3.6	1.1
M	1018	6.5	2.0	Tu	1142	6.9	2.1
	1700	3.0	0.9		1854	2.2	0.7
	2300	5.3	1.6				
4	0430	3.4	1.0	19	0106	5.2	1.6
Tu	1112	6.8	2.1	W	0612	3.7	1.1
	1806	2.5	0.8		1236	7.0	2.1
					1954	2.1	0.7
5	0012	5.2	1.6	20	0212	5.2	1.6
W	0524	3.5	1.1	Th	0706	3.7	1.1
	1206	7.2	2.2		1330	7.1	2.2
	1912	2.1	0.6		2042	2.0	0.6
6	0124	5.2	1.6	21	0254	5.2	1.6
Th	0630	3.4	1.1	F	0754	3.7	1.1
	1306	7.7	2.3		1418	7.2	2.2
	2012	1.6	0.5		2124	1.9	0.6
7	0224	5.4	1.7	22	0336	5.3	1.6
F	0730	3.3	1.0	Sa	0842	3.5	1.1
	1400	8.1	2.5		1500	7.3	2.2
	2106	1.2	0.4		2200	1.9	0.6
8	0318	5.6	1.7	23	0406	5.4	1.7
Sa	0830	3.0	0.9	Su	0918	3.4	1.0
	1500	8.5	2.6		1542	7.3	2.2
	2200	0.9	0.3		2236	1.9	0.6
9	0406	5.8	1.8	24	0442	5.6	1.7
Su	0924	2.7	0.8	M	1000	3.2	1.0
	1554	8.7	2.6		1618	7.3	2.2
	2248	0.8	0.2		2306	1.9	0.6
10	0454	6.1	1.9	25	0512	5.7	1.7
M	1024	2.5	0.8	Tu	1036	3.1	1.0
	1648	8.7	2.6		1654	7.2	2.2
	2336	0.9	0.3		2336	2.0	0.6
11	0542	6.3	1.9	26	0542	5.8	1.8
Tu	1118	2.3	0.7	W	1118	3.0	0.9
	1736	8.4	2.6		1730	7.0	2.1
12	0018	1.0	0.3	27	0006	2.2	0.7
W	0630	6.6	2.0	Th	0612	6.0	1.8
	1212	2.2	0.7		1200	3.0	0.9
	1830	7.9	2.4		1812	6.7	2.1
13	0106	1.4	0.4	28	0036	2.4	0.7
Th	0718	6.8	2.1	F	0648	6.1	1.9
	1312	2.2	0.7		1242	2.9	0.9
	1930	7.3	2.2		1848	6.4	2.0
14	0148	1.9	0.6	29	0100	2.6	0.8
F	0806	6.9	2.1	Sa	0718	6.3	1.9
	1418	2.3	0.7		1330	2.8	0.9
	2024	6.7	2.0		1936	6.0	1.8
15	0236	2.4	0.7	30	0136	2.9	0.9
Sa	0854	6.9	2.1	Su	0754	6.5	2.0
	1524	2.4	0.7		1424	2.7	0.8
	2130	6.0	1.8		2030	5.6	1.7
				31	0206	3.2	1.0
				M	0842	6.6	2.0
					1524	2.6	0.8
					2130	5.3	1.6

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0248	3.4	1.0	16	0430	3.8	1.2
Tu	0930	6.8	2.1	W	1054	6.7	2.0
	1636	2.5	0.8		1818	2.3	0.7
	2248	5.1	1.5				
2	0348	3.6	1.1	17	0036	5.0	1.5
W	1030	7.0	2.1	Th	0530	3.9	1.2
	1748	2.2	0.7		1154	6.7	2.0
	2359	5.0	1.5		1918	2.3	0.7
3	0454	3.6	1.1	18	0136	5.1	1.5
Th	1142	7.3	2.2	F	0630	3.9	1.2
	1854	1.9	0.6		1254	6.7	2.0
					2006	2.2	0.7
4	0112	5.2	1.6	19	0224	5.2	1.6
F	0612	3.5	1.1	Sa	0724	3.7	1.1
	1248	7.6	2.3		1342	6.8	2.1
	1954	1.5	0.5		2048	2.1	0.7
5	0206	5.4	1.6	20	0300	5.3	1.6
Sa	0718	3.2	1.0	Su	0818	3.5	1.1
	1348	7.9	2.4		1430	6.9	2.1
	2048	1.2	0.4		2124	2.1	0.6
6	0300	5.7	1.7	21	0330	5.5	1.7
Su	0818	2.9	0.9	M	0900	3.2	1.0
	1448	8.2	2.5		1512	6.9	2.1
	2142	1.1	0.3		2154	2.1	0.6
7	0348	6.1	1.9	22	0400	5.8	1.8
M	0918	2.5	0.8	Tu	0942	3.0	0.9
	1542	8.2	2.5		1554	6.9	2.1
	2224	1.1	0.3		2224	2.1	0.7
8	0430	6.5	2.0	23	0436	6.0	1.8
Tu	1018	2.1	0.6	W	1024	2.8	0.8
	1636	8.1	2.5		1636	6.8	2.1
	2306	1.2	0.4		2254	2.2	0.7
9	0518	6.8	2.1	24	0506	6.3	1.9
W	1112	1.9	0.6	Th	1106	2.5	0.8
	1724	7.7	2.4		1712	6.6	2.0
	2348	1.5	0.5		2324	2.4	0.7
10	0600	7.1	2.2	25	0536	6.5	2.0
Th	1206	1.7	0.5	F	1148	2.3	0.7
	1818	7.3	2.2		1754	6.3	1.9
					2354	2.6	0.8
11	0030	1.9	0.6	26	0606	6.7	2.0
F	0642	7.2	2.2	Sa	1230	2.2	0.7
	1300	1.7	0.5		1842	6.0	1.8
	1912	6.7	2.0				
12	0112	2.4	0.7	27	0024	2.8	0.9
Sa	0724	7.3	2.2	Su	0642	6.9	2.1
	1400	1.8	0.6		1318	2.1	0.6
	2006	6.1	1.9		1930	5.7	1.7
13	0154	2.8	0.9	28	0100	3.1	0.9
Su	0812	7.2	2.2	M	0724	7.0	2.1
	1500	2.0	0.6		1412	2.0	0.6
	2112	5.6	1.7		2024	5.4	1.7
14	0242	3.2	1.0	29	0136	3.3	1.0
M	0900	7.0	2.1	Tu	0806	7.1	2.2
	1600	2.1	0.7		1512	2.0	0.6
	2218	5.2	1.6		2124	5.2	1.6
15	0330	3.6	1.1	30	0230	3.5	1.1
Tu	0954	6.8	2.1	W	0906	7.1	2.2
	1712	2.3	0.7		1618	1.9	0.6
	2330	5.0	1.5		2236	5.0	1.5

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CABO de HORNOS, CHILE, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0330	3.6	1.1	16	0442	3.9	1.2
Th	1012	7.2	2.2	F	1106	6.4	2.0
	1730	1.8	0.6		1824	2.3	0.7
	2348	5.1	1.5				
2	0442	3.6	1.1	17	0048	5.0	1.5
F	1118	7.3	2.2	Sa	0548	3.8	1.2
	1836	1.7	0.5		1206	6.4	1.9
					1912	2.4	0.7
3	0048	5.2	1.6	18	0130	5.2	1.6
Sa	0600	3.4	1.0	Su	0654	3.7	1.1
	1230	7.4	2.3		1300	6.3	1.9
	1930	1.5	0.5		1954	2.4	0.7
4	0148	5.6	1.7	19	0212	5.4	1.7
Su	0712	3.0	0.9	M	0742	3.4	1.0
	1336	7.5	2.3		1354	6.3	1.9
	2024	1.4	0.4		2036	2.4	0.7
5	0236	6.0	1.8	20	0248	5.7	1.7
M	0818	2.6	0.8	Tu	0836	3.1	0.9
	1436	7.5	2.3		1442	6.3	1.9
	2112	1.4	0.4		2106	2.4	0.7
6	0324	6.5	2.0	21	0318	6.1	1.9
Tu	0918	2.1	0.7	W	0924	2.7	0.8
	1530	7.4	2.3		1530	6.3	1.9
	2154	1.6	0.5		2142	2.5	0.8
7	0406	6.9	2.1	22	0354	6.4	2.0
W	1012	1.8	0.5	Th	1006	2.3	0.7
	1624	7.2	2.2		1612	6.2	1.9
	2236	1.8	0.5		2212	2.6	0.8
8	0448	7.2	2.2	23	0424	6.7	2.1
Th	1106	1.5	0.5	F	1048	2.0	0.6
	1718	6.9	2.1		1700	6.1	1.9
	2318	2.1	0.6		2248	2.7	0.8
9	0530	7.4	2.3	24	0500	7.0	2.1
F	1200	1.3	0.4	Sa	1136	1.7	0.5
	1812	6.5	2.0		1742	5.9	1.8
	2359	2.4	0.7		2318	2.9	0.9
10	0612	7.5	2.3	25	0536	7.2	2.2
Sa	1248	1.3	0.4	Su	1224	1.5	0.5
	1900	6.1	1.9		1836	5.7	1.7
					2354	3.0	0.9
11	0036	2.8	0.9	26	0618	7.4	2.3
Su	0654	7.4	2.3	M	1312	1.4	0.4
	1342	1.5	0.5		1924	5.5	1.7
	1954	5.7	1.7				
12	0118	3.2	1.0	27	0036	3.1	1.0
M	0736	7.2	2.2	Tu	0700	7.5	2.3
	1436	1.7	0.5		1406	1.4	0.4
	2048	5.3	1.6		2018	5.3	1.6
13	0200	3.5	1.1	28	0124	3.3	1.0
Tu	0824	7.0	2.1	W	0754	7.5	2.3
	1530	1.9	0.6		1500	1.4	0.4
	2148	5.1	1.6		2118	5.2	1.6
14	0248	3.7	1.1	29	0218	3.4	1.0
W	0912	6.7	2.1	Th	0848	7.4	2.3
	1630	2.1	0.7		1606	1.5	0.5
	2248	5.0	1.5		2224	5.2	1.6
15	0342	3.9	1.2	30	0324	3.4	1.0
Th	1006	6.5	2.0	F	0954	7.3	2.2
	1730	2.3	0.7		1706	1.5	0.5
	2354	4.9	1.5		2324	5.3	1.6
				31	0442	3.3	1.0
				Sa	1106	7.2	2.2
					1806	1.6	0.5

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0024	5.6	1.7	16	0030	5.3	1.6
Su	0554	3.1	1.0	M	0606	3.5	1.1
	1212	7.0	2.1		1212	5.9	1.8
	1900	1.7	0.5		1854	2.5	0.8
2	0118	6.0	1.8	17	0112	5.6	1.7
M	0706	2.7	0.8	Tu	0706	3.2	1.0
	1318	6.9	2.1		1312	5.8	1.8
	1954	1.8	0.6		1930	2.6	0.8
3	0206	6.4	2.0	18	0154	6.0	1.8
Tu	0812	2.3	0.7	W	0806	2.9	0.9
	1424	6.7	2.0		1406	5.7	1.7
	2042	1.9	0.6		2012	2.7	0.8
4	0254	6.9	2.1	19	0230	6.3	1.9
W	0912	1.9	0.6	Th	0854	2.4	0.7
	1524	6.5	2.0		1500	5.7	1.7
	2124	2.2	0.7		2048	2.8	0.8
5	0336	7.2	2.2	20	0306	6.7	2.1
Th	1012	1.5	0.5	F	0948	1.9	0.6
	1618	6.3	1.9		1554	5.6	1.7
	2206	2.4	0.7		2130	2.9	0.9
6	0418	7.4	2.3	21	0348	7.1	2.2
F	1100	1.2	0.4	Sa	1030	1.5	0.5
	1712	6.0	1.8		1642	5.6	1.7
	2248	2.7	0.8		2206	2.9	0.9
7	0500	7.5	2.3	22	0424	7.4	2.3
Sa	1148	1.1	0.4	Su	1118	1.2	0.4
	1800	5.8	1.8		1736	5.5	1.7
	2324	2.9	0.9		2248	3.0	0.9
8	0542	7.5	2.3	23	0512	7.7	2.3
Su	1236	1.2	0.4	M	1212	1.0	0.3
	1848	5.6	1.7		1824	5.5	1.7
					2330	3.0	0.9
9	0006	3.1	1.0	24	0600	7.8	2.4
M	0624	7.4	2.3	Tu	1300	0.9	0.3
	1324	1.3	0.4		1918	5.4	1.7
	1936	5.3	1.6				
10	0048	3.3	1.0	25	0024	3.1	0.9
Tu	0706	7.2	2.2	W	0648	7.9	2.4
	1406	1.5	0.5		1354	0.9	0.3
	2024	5.2	1.6		2012	5.4	1.6
11	0124	3.5	1.1	26	0118	3.1	0.9
W	0748	7.0	2.1	Th	0742	7.8	2.4
	1454	1.8	0.5		1448	1.0	0.3
	2118	5.0	1.5		2106	5.4	1.6
12	0212	3.7	1.1	27	0218	3.1	0.9
Th	0836	6.7	2.1	F	0842	7.5	2.3
	1548	2.0	0.6		1542	1.2	0.4
	2206	5.0	1.5		2206	5.5	1.7
13	0300	3.8	1.2	28	0324	3.1	0.9
F	0924	6.5	2.0	Sa	0942	7.3	2.2
	1636	2.2	0.7		1642	1.4	0.4
	2300	5.0	1.5		2300	5.7	1.8
14	0400	3.8	1.2	29	0436	3.0	0.9
Sa	1018	6.3	1.9	Su	1048	6.9	2.1
	1724	2.3	0.7		1736	1.6	0.5
	2348	5.1	1.6		2354	6.1	1.9
15	0500	3.7	1.1	30	0554	2.7	0.8
Su	1112	6.1	1.9	M	1200	6.5	2.0
	1812	2.4	0.7		1824	1.9	0.6

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0048	6.4	2.0	16	0012	5.9	1.8
Tu	0706	2.4	0.7	W	0630	3.0	0.9
	1306	6.1	1.9		1230	5.4	1.6
	1918	2.2	0.7		1824	2.8	0.9
2	0136	6.8	2.1	17	0054	6.2	1.9
W	0812	2.0	0.6	Th	0730	2.6	0.8
	1412	5.9	1.8		1330	5.2	1.6
	2006	2.5	0.8		1912	2.9	0.9
3	0224	7.1	2.2	18	0142	6.7	2.0
Th	0906	1.6	0.5	F	0830	2.1	0.6
	1512	5.7	1.7		1430	5.2	1.6
	2048	2.7	0.8		1954	3.0	0.9
4	0312	7.3	2.2	19	0224	7.1	2.2
F	1000	1.4	0.4	Sa	0924	1.6	0.5
	1612	5.5	1.7		1530	5.2	1.6
	2136	2.9	0.9		2042	3.0	0.9
5	0354	7.4	2.3	20	0312	7.4	2.3
Sa	1054	1.2	0.4	Su	1012	1.2	0.4
	1706	5.4	1.7		1624	5.3	1.6
	2218	3.1	0.9		2130	3.0	0.9
6	0436	7.4	2.3	21	0400	7.8	2.4
Su	1136	1.2	0.4	M	1106	0.9	0.3
	1748	5.3	1.6		1718	5.3	1.6
	2300	3.2	1.0		2224	2.9	0.9
7	0518	7.4	2.3	22	0454	8.0	2.5
M	1218	1.2	0.4	Tu	1154	0.7	0.2
	1836	5.2	1.6		1812	5.4	1.7
	2336	3.3	1.0		2318	2.9	0.9
8	0600	7.3	2.2	23	0542	8.1	2.5
Tu	1300	1.3	0.4	W	1248	0.6	0.2
	1918	5.2	1.6		1900	5.5	1.7
9	0018	3.4	1.0	24	0012	2.8	0.9
W	0636	7.1	2.2	Th	0636	8.1	2.5
	1342	1.5	0.5		1336	0.7	0.2
	2000	5.1	1.6		1954	5.6	1.7
10	0100	3.5	1.1	25	0112	2.7	0.8
Th	0718	6.9	2.1	F	0736	7.9	2.4
	1424	1.7	0.5		1430	0.9	0.3
	2042	5.1	1.5		2042	5.8	1.8
11	0142	3.5	1.1	26	0212	2.7	0.8
F	0800	6.7	2.0	Sa	0830	7.5	2.3
	1506	1.9	0.6		1518	1.1	0.4
	2124	5.1	1.5		2136	6.0	1.8
12	0230	3.6	1.1	27	0318	2.6	0.8
Sa	0848	6.4	2.0	Su	0930	7.0	2.1
	1548	2.1	0.6		1612	1.5	0.5
	2206	5.2	1.6		2230	6.3	1.9
13	0324	3.6	1.1	28	0430	2.5	0.8
Su	0936	6.1	1.9	M	1036	6.4	2.0
	1624	2.3	0.7		1700	1.9	0.6
	2254	5.3	1.6		2324	6.6	2.0
14	0424	3.5	1.1	29	0542	2.3	0.7
M	1030	5.8	1.8	Tu	1148	5.9	1.8
	1706	2.5	0.8		1748	2.3	0.7
	2336	5.6	1.7				
15	0530	3.3	1.0	30	0018	6.8	2.1
Tu	1124	5.6	1.7	W	0654	2.0	0.6
	1748	2.7	0.8		1254	5.5	1.7
					1842	2.6	0.8
				31	0106	7.1	2.2
				Th	0800	1.8	0.5
					1400	5.3	1.6
					1930	2.9	0.9

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTA ARENAS, CHILE, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0136	8.0	2.4	16	0206	7.4	2.3
Th	0818	3.6	1.1	F	0836	3.0	0.9
	1112	4.4	1.4		1336	4.4	1.3
	1854	0.7	0.2		1948	1.1	0.3
2	0224	8.1	2.5	17	0242	7.4	2.3
F	0900	3.4	1.0	Sa	0912	2.9	0.9
	1230	4.5	1.4		1412	4.5	1.4
	1942	0.6	0.2		2012	1.1	0.3
3	0306	7.9	2.4	18	0312	7.3	2.2
Sa	0942	3.1	1.0	Su	0942	2.7	0.8
	1406	4.6	1.4		1436	4.8	1.5
	2036	0.7	0.2		2036	1.1	0.3
4	0348	7.7	2.4	19	0342	7.2	2.2
Su	1024	2.9	0.9	M	1006	2.6	0.8
	1518	4.8	1.5		1448	5.1	1.6
	2130	1.0	0.3		2054	1.1	0.3
5	0430	7.3	2.2	20	0406	7.0	2.1
M	1100	2.6	0.8	Tu	1024	2.3	0.7
	1618	5.0	1.5		1518	5.5	1.7
	2218	1.4	0.4		2124	1.3	0.4
6	0512	6.9	2.1	21	0418	6.9	2.1
Tu	1142	2.3	0.7	W	1030	2.0	0.6
	1724	5.2	1.6		1600	5.8	1.8
	2312	2.0	0.6		2200	1.6	0.5
7	0548	6.4	1.9	22	0424	6.7	2.0
W	1224	2.0	0.6	Th	1048	1.7	0.5
	1830	5.3	1.6		1648	6.0	1.8
					2242	2.2	0.7
8	0018	2.8	0.8	23	0448	6.5	2.0
Th	0630	5.8	1.8	F	1118	1.5	0.5
	1312	1.9	0.6		1742	6.0	1.8
	1942	5.5	1.7		2324	2.9	0.9
9	0148	3.4	1.0	24	0518	6.1	1.9
F	0712	5.3	1.6	Sa	1154	1.3	0.4
	1412	1.7	0.5		1912	6.0	1.8
	2054	5.8	1.8				
10	0306	3.7	1.1	25	0018	3.7	1.1
Sa	0818	4.9	1.5	Su	0548	5.7	1.7
	1506	1.6	0.5		1242	1.3	0.4
	2206	6.2	1.9		2106	6.2	1.9
11	0424	3.9	1.2	26	0200	4.5	1.4
Su	0924	4.6	1.4	M	0630	5.2	1.6
	1606	1.5	0.5		1336	1.3	0.4
	2306	6.6	2.0		2230	6.6	2.0
12	0530	3.7	1.1	27	0518	4.5	1.4
M	1030	4.4	1.3	Tu	0712	4.8	1.5
	1700	1.4	0.4		1448	1.3	0.4
	2359	7.0	2.1		2336	7.0	2.1
13	0630	3.5	1.1	28	0624	4.1	1.3
Tu	1130	4.3	1.3	W	0806	4.4	1.3
	1748	1.3	0.4		1654	1.2	0.4
14	0042	7.3	2.2	29	0036	7.4	2.3
W	0718	3.3	1.0	Th	0718	3.8	1.2
	1218	4.3	1.3		0930	4.1	1.2
	1836	1.2	0.4		1812	1.0	0.3
15	0124	7.4	2.3	30	0124	7.6	2.3
Th	0800	3.1	1.0	F	0806	3.4	1.0
	1300	4.3	1.3		1248	4.3	1.3
	1912	1.1	0.4		1912	0.9	0.3
				31	0212	7.6	2.3
				Sa	0842	3.0	0.9
					1342	4.7	1.4
					2006	0.8	0.2

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0254	7.4	2.3	16	0248	6.9	2.1
Su	0918	2.6	0.8	M	0912	2.3	0.7
	1436	5.1	1.6		1436	5.3	1.6
	2054	0.9	0.3		2042	1.2	0.4
2	0330	7.2	2.2	17	0312	6.8	2.1
M	0954	2.2	0.7	Tu	0930	2.0	0.6
	1524	5.5	1.7		1506	5.8	1.8
	2136	1.2	0.4		2106	1.4	0.4
3	0400	6.9	2.1	18	0330	6.7	2.0
Tu	1024	1.8	0.6	W	0942	1.7	0.5
	1618	5.8	1.8		1530	6.2	1.9
	2218	1.6	0.5		2124	1.6	0.5
4	0436	6.6	2.0	19	0336	6.6	2.0
W	1054	1.5	0.5	Th	0948	1.3	0.4
	1706	6.0	1.8		1606	6.6	2.0
	2300	2.2	0.7		2154	2.0	0.6
5	0500	6.2	1.9	20	0348	6.5	2.0
Th	1124	1.3	0.4	F	1012	0.9	0.3
	1754	6.1	1.9		1642	6.8	2.1
	2348	2.8	0.9		2230	2.5	0.8
6	0506	5.7	1.8	21	0406	6.3	1.9
F	1154	1.3	0.4	Sa	1042	0.7	0.2
	1854	6.0	1.8		1730	6.7	2.1
					2306	3.1	1.0
7	0054	3.5	1.1	22	0436	6.0	1.8
Sa	0506	5.3	1.6	Su	1118	0.7	0.2
	1236	1.5	0.5		1836	6.5	2.0
	2006	5.9	1.8		2354	3.9	1.2
8	0218	3.9	1.2	23	0512	5.6	1.7
Su	0530	5.0	1.5	M	1200	0.9	0.3
	1342	1.7	0.5		2030	6.3	1.9
	2118	6.0	1.8				
9	0348	4.1	1.2	24	0100	4.6	1.4
M	0600	4.5	1.4	Tu	0548	5.1	1.5
	1518	1.8	0.6		1254	1.2	0.4
	2230	6.2	1.9		2206	6.3	1.9
10	0506	3.9	1.2	25	0506	4.3	1.3
Tu	0954	3.9	1.2	W	0624	4.5	1.4
	1630	1.8	0.5		1412	1.5	0.5
	2336	6.5	2.0		2324	6.6	2.0
11	0612	3.5	1.1	26	0612	3.8	1.2
W	0736	3.6	1.1	Th	0736	3.9	1.2
	0854	3.5	1.1		1712	1.5	0.5
	1112	3.9	1.2				
	1730	1.6	0.5				
12	0024	6.8	2.1	27	0024	6.9	2.1
Th	0700	3.1	1.0	F	0700	3.3	1.0
	1206	4.1	1.2		1200	4.1	1.3
	1824	1.4	0.4		1824	1.2	0.4
13	0106	7.0	2.1	28	0106	7.0	2.1
F	0742	2.9	0.9	Sa	0736	2.8	0.9
	1254	4.3	1.3		1300	4.7	1.4
	1906	1.2	0.4		1918	1.1	0.3
14	0148	7.0	2.1				
Sa	0812	2.7	0.8				
	1330	4.6	1.4				
	1942	1.2	0.4				
15	0218	7.0	2.1				
Su	0842	2.5	0.8				
	1406	5.0	1.5				
	2018	1.2	0.4				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0148	6.9	2.1	16	0148	6.4	2.0
Su	0812	2.3	0.7	M	0806	2.1	0.6
	1348	5.3	1.6		1354	5.6	1.7
	2006	1.1	0.3		2006	1.5	0.5
2	0224	6.8	2.1	17	0218	6.3	1.9
M	0842	1.9	0.6	Tu	0830	1.9	0.6
	1430	5.9	1.8		1424	6.1	1.9
	2048	1.2	0.4		2036	1.6	0.5
3	0300	6.6	2.0	18	0236	6.2	1.9
Tu	0918	1.5	0.5	W	0848	1.5	0.5
	1518	6.3	1.9		1454	6.7	2.0
	2130	1.5	0.5		2106	1.8	0.6
4	0330	6.3	1.9	19	0248	6.1	1.9
W	0942	1.2	0.4	Th	0854	1.1	0.3
	1600	6.6	2.0		1530	7.1	2.2
	2206	1.9	0.6		2130	2.1	0.7
5	0354	6.1	1.9	20	0248	6.1	1.9
Th	1006	1.0	0.3	F	0906	0.7	0.2
	1636	6.7	2.1		1600	7.3	2.2
	2242	2.4	0.7		2154	2.5	0.8
6	0406	5.8	1.8	21	0306	6.0	1.8
F	1024	0.9	0.3	Sa	0936	0.4	0.1
	1718	6.7	2.0		1636	7.3	2.2
	2318	2.9	0.9		2224	2.9	0.9
7	0400	5.6	1.7	22	0336	5.9	1.8
Sa	1042	0.9	0.3	Su	1006	0.3	0.1
	1812	6.4	2.0		1724	7.1	2.2
	2359	3.4	1.0		2300	3.4	1.0
8	0418	5.3	1.6	23	0406	5.6	1.7
Su	1112	1.1	0.3	M	1042	0.4	0.1
	1912	6.1	1.9		1830	6.7	2.0
					2342	4.0	1.2
9	0130	3.8	1.2	24	0442	5.2	1.6
M	0448	4.9	1.5	Tu	1130	0.8	0.3
	1148	1.5	0.5		2012	6.2	1.9
	2024	5.8	1.8				
10	0306	4.0	1.2	25	0312	4.2	1.3
Tu	0524	4.4	1.3	W	0518	4.6	1.4
	1236	1.9	0.6		1224	1.4	0.4
	2148	5.8	1.8		2142	6.1	1.9
11	0436	3.7	1.1	26	0442	3.8	1.2
W	0600	3.9	1.2	Th	0612	4.0	1.2
	1554	2.1	0.7		1542	2.0	0.6
	2300	6.0	1.8		2300	6.1	1.9
12	0548	3.3	1.0	27	0542	3.2	1.0
Th	1054	3.7	1.1	F	1054	4.0	1.2
	1706	1.9	0.6		1718	1.8	0.6
	2354	6.2	1.9		2354	6.2	1.9
13	0630	2.9	0.9	28	0624	2.7	0.8
F	1154	4.1	1.3	Sa	1200	4.7	1.4
	1806	1.7	0.5		1818	1.6	0.5
14	0042	6.4	2.0	29	0036	6.3	1.9
Sa	0706	2.6	0.8	Su	0700	2.1	0.7
	1236	4.6	1.4		1254	5.5	1.7
	1848	1.5	0.5		1906	1.5	0.5
15	0118	6.5	2.0	30	0118	6.2	1.9
Su	0736	2.4	0.7	M	0736	1.7	0.5
	1318	5.1	1.6		1336	6.2	1.9
	1930	1.4	0.4		1954	1.6	0.5
				31	0148	6.0	1.8
				Tu	0806	1.3	0.4
					1418	6.7	2.0
					2036	1.8	0.5

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTA ARENAS, CHILE, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0224	5.9	1.8	16	0148	5.5	1.7
W	0836	1.0	0.3	Th	0754	1.1	0.3
	1500	7.0	2.1		1442	7.4	2.3
	2118	2.1	0.6		2106	2.5	0.8
2	0248	5.7	1.7	17	0148	5.4	1.7
Th	0900	0.8	0.2	F	0806	0.7	0.2
	1536	7.2	2.2		1518	7.7	2.4
	2154	2.3	0.7		2136	2.8	0.8
3	0306	5.5	1.7	18	0200	5.5	1.7
F	0918	0.7	0.2	Sa	0830	0.3	0.1
	1612	7.3	2.2		1554	7.8	2.4
	2224	2.6	0.8		2212	3.1	0.9
4	0306	5.4	1.6	19	0230	5.4	1.7
Sa	0930	0.6	0.2	Su	0906	0.2	0.1
	1648	7.1	2.2		1636	7.6	2.3
	2300	2.9	0.9		2248	3.3	1.0
5	0318	5.2	1.6	20	0306	5.3	1.6
Su	0954	0.7	0.2	M	0942	0.2	0.1
	1730	6.8	2.1		1724	7.3	2.2
	2336	3,2	1.0		2342	3.6	1.1
6	0348	5.0	1.5	21	0342	5.1	1.5
M	1024	1.0	0.3	Tu	1024	0.6	0.2
	1824	6.3	1.9		1830	6.7	2.1
7	0054	3.5	1.1	22	0130	3.8	1.2
Tu	0418	4.7	1.4	W	0424	4.6	1.4
	1100	1.3	0.4		1112	1.2	0.4
	1936	5.9	1.8		1954	6.2	1.9
8	0230	3.6	1.1	23	0254	3.6	1.1
W	0500	4.2	1.3	Th	0518	4.1	1.3
	1142	1.9	0.6		1212	2.0	0.6
	2054	5.6	1.7		2112	5.9	1.8
9	0348	3.5	1.1	24	0400	3.1	1.0
Th	0548	3.8	1.2	F	0930	4.0	1.2
	1412	2.5	0.8		1548	2.4	0.7
	2212	5.6	1.7		2218	5.8	1.8
10	0454	3.1	1.0	25	0500	2.6	0.8
F	1024	3.8	1.2	Sa	1054	4.7	1.4
	1636	2.3	0.7		1706	2.3	0.7
	2312	5.7	1.7		2318	5.7	1.7
11	0542	2.8	0.8	26	0542	2.0	0.6
Sa	1124	4.4	1.3	Su	1148	5.5	1.7
	1736	2.1	0.7		1806	2.2	0.7
	2359	5.8	1.8		2359	5.6	1.7
12	0618	2.4	0.7	27	0618	1.5	0.5
Su	1212	5.1	1.6	M	1236	6.3	1.9
	1824	2.0	0.6		1854	2.2	0.7
13	0036	5.8	1.8	28	0036	5.5	1.7
M	0648	2.1	0.6	Tu	0654	1.1	0.4
	1254	5.8	1.8		1318	6.9	2.1
	1912	2.0	0.6		1942	2.3	0.7
14	0106	5.7	1.8	29	0112	5.4	1.6
Tu	0718	1.8	0.6	W	0730	0.9	0.3
	1330	6.4	2.0		1400	7.3	2.2
	1948	2.1	0.6		2024	2.5	0.8
15	0130	5.6	1.7	30	0142	5.2	1.6
W	0742	1.5	0.5	Th	0754	0.8	0.2
	1406	7.0	2.1		1436	7.5	2.3
	2030	2.3	0.7		2100	2.6	0.8

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0206	5.1	1.6	16	0042	5.0	1.5
F	0818	0.7	0.2	Sa	0724	0.5	0.1
	1512	7.6	2.3		1506	8.1	2.5
	2142	2.8	0.8		2148	3.3	1.0
2	0212	5.0	1.5	17	0118	5.0	1.5
Sa	0830	0.7	0.2	Su	0800	0.3	0.1
	1548	7.5	2.3		1554	8.0	2.5
	2218	2.9	0.9		2230	3.3	1.0
3	0218	5.0	1.5	18	0200	4.9	1.5
Su	0848	0.7	0.2	M	0842	0.3	0.1
	1624	7.3	2.2		1636	7.8	2.4
	2254	3.0	0.9		2318	3.3	1.0
4	0242	4.9	1.5	19	0242	4.8	1.5
M	0918	0.7	0.2	Tu	0924	0.6	0.2
	1706	7.0	2.1		1730	7.3	2.2
	2336	3.1	1.0				
5	0324	4.7	1.4	20	0012	3.3	1.0
Tu	0954	1.0	0.3	W	0336	4.6	1.4
	1748	6.6	2.0		1012	1.0	0.3
					1824	6.8	2.1
6	0030	3.2	1.0	21	0118	3.1	1.0
W	0400	4.5	1.4	Th	0430	4.3	1.3
	1030	1.3	0.4		1112	1.8	0.6
	1848	6.1	1.9		1930	6.3	1.9
7	0142	3.3	1.0	22	0218	2.9	0.9
Th	0448	4.2	1.3	F	0754	4.2	1.3
	1118	1.9	0.6		1354	2.6	0.8
	1954	5.7	1.8		2030	5.8	1.8
8	0254	3.1	1.0	23	0318	2.4	0.7
F	0548	4.0	1.2	Sa	0924	4.8	1.5
	1218	2.5	0.8		1530	2.9	0.9
	2106	5.5	1.7		2130	5.5	1.7
9	0354	2.9	0.9	24	0412	2.0	0.6
Sa	0942	4.2	1.3	Su	1036	5.5	1.7
	1548	2.8	0.9		1642	2.9	0.9
	2206	5.4	1.6		2230	5.3	1.6
10	0442	2.6	0.8	25	0500	1.5	0.5
Su	1048	4.9	1.5	M	1130	6.3	1.9
	1700	2.8	0.9		1748	3.0	0.9
	2300	5.3	1.6		2318	5.2	1.6
11	0524	2.2	0.7	26	0542	1.1	0.4
M	1136	5.6	1.7	Tu	1218	6.9	2.1
	1754	2.8	0.9		1836	3.0	0.9
	2336	5.2	1.6		2359	5.0	1.5
12	0554	1.9	0.6	27	0618	0.9	0.3
Tu	1224	6.4	2.0	W	1300	7.3	2.2
	1848	2.9	0.9		1924	3.0	0.9
13	0012	5.1	1.6	28	0036	4.9	1.5
W	0624	1.5	0.5	Th	0654	0.8	0.3
	1306	7.1	2.2		1342	7.6	2.3
	1930	3.0	0.9		2006	3.1	0.9
14	0030	5.0	1.5	29	0106	4.7	1.4
Th	0642	1.2	0.4	F	0724	0.8	0.3
	1342	7.6	2.3		1418	7.7	2.3
	2018	3.1	0.9		2048	3.1	0.9
15	0030	4.9	1.5	30	0136	4.6	1.4
F	0700	0.8	0.2	Sa	0748	0.9	0.3
	1424	7.9	2.4		1454	7.6	2.3
	2100	3.2	1.0		2130	3.1	0.9
				31	0130	4.6	1.4
				Su	0800	0.9	0.3
					1536	7.5	2.3
					2206	3.0	0.9

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0142	4.6	1.4	16	0148	4.6	1.4
M	0824	0.9	0.3	Tu	0842	0.7	0.2
	1612	7.4	2.3		1630	7.7	2.4
	2248	3.0	0.9		2312	3.1	0.9
2	0224	4.6	1.4	17	0254	4.6	1.4
Tu	0854	0.9	0.3	W	0936	1.0	0.3
	1648	7.1	2.2		1718	7.3	2.2
	2324	2.9	0.9		2359	2.8	0.8
3	0306	4.6	1.4	18	0442	4.6	1.4
W	0936	1.1	0.3	Th	1030	1.6	0.5
	1718	6.8	2.1		1800	6.8	2.1
4	0006	2.9	0.9	19	0048	2.5	0.8
Th	0354	4.6	1.4	F	0618	4.8	1.5
	1018	1.4	0.4		1154	2.3	0.7
	1800	6.4	2.0		1848	6.2	1.9
5	0048	2.9	0.9	20	0136	2.2	0.7
F	0448	4.5	1.4	Sa	0742	5.1	1.5
	1100	1.9	0.6		1342	2.9	0.9
	1836	6.0	1.8		1942	5.7	1.8
6	0142	2.8	0.8	21	0230	1.8	0.6
Sa	0554	4.5	1.4	Su	0854	5.5	1.7
	1154	2.6	0.8		1506	3.3	1.0
	1918	5.6	1.7		2036	5.3	1.6
7	0236	2.6	0.8	22	0324	1.5	0.5
Su	0848	4.8	1.5	M	1006	6.1	1.9
	1312	3.2	1.0		1618	3.6	1.1
	1954	5.3	1.6		2136	5.0	1.5
8	0324	2.3	0.7	23	0412	1.3	0.4
M	1000	5.4	1.7	Tu	1106	6.6	2.0
	1612	3.6	1.1		1724	3.6	1.1
	2018	5.1	1.5		2230	4.8	1.5
9	0406	2.0	0.6	24	0500	1.1	0.3
Tu	1100	6.1	1.9	W	1200	7.1	2.2
	1724	3.7	1.1		1824	3.5	1.1
	2054	4.9	1.5		2318	4.6	1.4
10	0442	1.6	0.5	25	0548	1.0	0.3
W	1154	6.9	2.1	Th	1242	7.4	2.3
	1824	3.7	1.1		1912	3.4	1.1
	2136	4.7	1.4				
11	0512	1.3	0.4	26	0006	4.5	1.4
Th	1242	7.4	2.3	F	0630	1.0	0.3
	1918	3.7	1.1		1324	7.5	2.3
	2218	4.7	1.4		1954	3.3	1.0
12	0542	1.0	0.3	27	0048	4.4	1.3
F	1330	7.8	2.4	Sa	0706	1.0	0.3
	2006	3.7	1.1		1406	7.6	2.3
	2306	4.6	1.4		2036	3.2	1.0
13	0618	0.7	0.2	28	0124	4.3	1.3
Sa	1412	8.1	2.5	Su	0736	1.1	0.3
	2054	3.6	1.1		1442	7.5	2.3
	2354	4.6	1.4		2118	3.1	0.9
14	0700	0.5	0.2	29	0200	4.3	1.3
Su	1500	8.1	2.5	M	0800	1.1	0.3
	2142	3.5	1.1		1518	7.4	2.3
					2154	2.9	0.9
15	0048	4.6	1.4	30	0212	4.4	1.3
M	0748	0.5	0.2	Tu	0824	1.1	0.3
	1548	8.0	2.4		1554	7.3	2.2
	2230	3.3	1.0		2230	2.8	0.9

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTA ARENAS, CHILE, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0230	4.5	1.4	16	0406	5.1	1.5
W	0848	1.1	0.3	Th	1006	1.4	0.4
	1624	7.2	2.2		1654	7.0	2.1
	2300	2.7	0.8		2324	2.1	0.7
2	0312	4.8	1.5	17	0506	5.3	1.6
Th	0924	1.3	0.4	F	1100	1.9	0.6
	1654	6.9	2.1		1730	6.6	2.0
	2324	2.5	0.8		2359	1.8	0.6
3	0400	5.0	1.5	18	0606	5.6	1.7
F	1006	1.5	0.5	Sa	1200	2.6	0.8
	1706	6.7	2.0		1806	6.1	1.9
	2336	2.3	0.7				
4	0448	5.2	1.6	19	0048	1.6	0.5
Sa	1048	2.0	0.6	Su	0712	5.8	1.8
	1718	6.4	2.0		1312	3.2	1.0
	2359	2.1	0.7		1836	5.6	1.7
5	0554	5.3	1.6	20	0136	1.5	0.5
Su	1130	2.7	0.8	M	0824	6.0	1.8
	1742	6.1	1.9		1430	3.8	1.2
					1830	5.1	1.6
6	0030	1.9	0.6	21	0230	1.4	0.4
M	0742	5.5	1.7	Tu	0930	6.3	1.9
	1230	3.4	1.0		1548	4.0	1.2
	1818	5.7	1.8		1836	4.7	1.4
7	0118	1.7	0.5	22	0330	1.3	0.4
Tu	0912	5.9	1.8	W	1036	6.6	2.0
	1348	4.1	1.3		1700	4.0	1.2
	1854	5.4	1.7		2148	4.4	1.3
8	0206	1.5	0.5	23	0430	1.3	0.4
W	1024	6.4	2.0	Th	1136	6.9	2.1
	1654	4.3	1.3		1806	3.7	1.1
	1936	5.1	1.6		2254	4.2	1.3
9	0300	1.3	0.4	24	0524	1.2	0.4
Th	1124	7.0	2.1	F	1224	7.1	2.2
	1806	4.3	1.3		1900	3.5	1.1
	2024	4.8	1.5		2354	4.2	1.3
10	0400	1.1	0.3	25	0612	1.2	0.4
F	1224	7.4	2.3	Sa	1306	7.3	2.2
	1906	4.1	1.3		1942	3.2	1.0
	2118	4.6	1.4				
11	0506	0.9	0.3	26	0042	4.2	1.3
Sa	1312	7.7	2.4	Su	0700	1.2	0.4
	2000	3.9	1.2		1348	7.3	2.2
	2218	4.4	1.3		2024	3.0	0.9
12	0612	0.8	0.2	27	0124	4.3	1.3
Su	1400	7.9	2.4	M	0736	1.2	0.4
	2042	3.6	1.1		1424	7.3	2.2
	2336	4.4	1.3		2100	2.8	0.9
13	0718	0.7	0.2	28	0206	4.5	1.4
M	1448	7.8	2.4	Tu	0812	1.2	0.4
	2130	3.3	1.0		1500	7.2	2.2
					2130	2.7	0.8
14	0130	4.5	1.4	29	0236	4.7	1.4
Tu	0818	0.8	0.2	W	0836	1.2	0.4
	1530	7.7	2.3		1530	7.1	2.2
	2206	2.9	0.9		2200	2.5	0.8
15	0300	4.7	1.4	30	0306	5.0	1.5
W	0912	1.0	0.3	Th	0900	1.3	0.4
	1612	7.4	2.3		1600	7.0	2.1
	2248	2.5	0.8		2218	2.3	0.7
				31	0336	5.3	1.6
				F	0918	1.5	0.5
					1612	6.8	2.1
					2230	2.0	0.6

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0400	5.7	1.7	16	0536	6.3	1.9
Sa	0954	1.8	0.5	Su	1136	2.9	0.9
	1618	6.7	2.0		1654	5.8	1.8
	2236	1.7	0.5		2342	1.2	0.4
2	0442	6.0	1.8	17	0636	6.3	1.9
Su	1030	2.2	0.7	M	1236	3.5	1.1
	1630	6.5	2.0		1654	5.4	1.7
	2306	1.4	0.4				
3	0530	6.1	1.9	18	0018	1.3	0.4
M	1106	2.8	0.9	Tu	0742	6.2	1.9
	1700	6.3	1.9		1354	3.9	1.2
	2336	1.2	0.4		1712	5.1	1.5
4	0636	6.2	1.9	19	0118	1.5	0.5
Tu	1154	3.6	1.1	W	0854	6.2	1.9
	1730	5.9	1.8		1518	4.1	1.3
					1742	4.6	1.4
5	0018	1.1	0.3	20	0248	1.6	0.5
W	0824	6.2	1.9	Th	1006	6.3	1.9
	1254	4.3	1.3		1636	4.0	1.2
	1806	5.5	1.7		2118	3.9	1.2
6	0106	1.1	0.3	21	0400	1.7	0.5
Th	0954	6.5	2.0	F	1112	6.5	2.0
	1630	4.6	1.4		1748	3.6	1.1
	1848	5.1	1.5		2242	3.9	1.2
7	0206	1.2	0.4	22	0506	1.5	0.5
F	1106	6.8	2.1	Sa	1206	6.7	2.1
	1748	4.4	1.3		1836	3.2	1.0
	1942	4.6	1.4		2348	4.1	1.3
8	0324	1.2	0.4	23	0600	1.4	0.4
Sa	1206	7.2	2.2	Su	1248	6.9	2.1
	1854	4.0	1.2		1918	2.9	0.9
	2048	4.3	1.3				
9	0530	1.1	0.4	24	0036	4.4	1.3
Su	1300	7.4	2.3	M	0648	1.3	0.4
	1942	3.6	1.1		1324	7.0	2.1
					1954	2.6	0.8
10	0006	4.2	1.3	25	0118	4.7	1.4
M	0642	1.0	0.3	Tu	0730	1.2	0.4
	1348	7.4	2.3		1400	6.9	2.1
	2018	3.2	1.0		2024	2.4	0.7
11	0118	4.6	1.4	26	0154	5.0	1.5
Tu	0736	0.9	0.3	W	0806	1.3	0.4
	1430	7.3	2.2		1430	6.8	2.1
	2100	2.8	0.8		2054	2.3	0.7
12	0212	5.0	1.5	27	0230	5.3	1.6
W	0830	1.0	0.3	Th	0836	1.4	0.4
	1506	7.2	2.2		1500	6.7	2.0
	2130	2.3	0.7		2118	2.1	0.6
13	0306	5.5	1.7	28	0300	5.8	1.8
Th	0918	1.3	0.4	F	0900	1.6	0.5
	1542	6.9	2.1		1518	6.6	2.0
	2206	1.9	0.6		2130	1.8	0.6
14	0400	5.9	1.8	29	0324	6.2	1.9
F	1006	1.7	0.5	Sa	0912	1.8	0.6
	1612	6.6	2.0		1524	6.5	2.0
	2236	1.5	0.5		2130	1.4	0.4
15	0448	6.2	1.9	30	0354	6.5	2.0
Sa	1048	2.2	0.7	Su	0936	2.1	0.7
	1642	6.2	1.9		1524	6.4	2.0
	2306	1.3	0.4		2148	1.0	0.3
				31	0424	6.8	2.1
				M	1012	2.6	0.8
					1548	6.3	1.9
					2218	0.8	0.2

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0506	6.8	2.1	16	0654	6.3	1.9
Tu	1048	3.1	0.9	W	1324	3.9	1.2
	1618	6.1	1.9		1630	4.9	1.5
	2254	0.7	0.2		2330	1.5	0.5
2	0606	6.6	2.0	17	0806	6.0	1.8
W	1130	3.7	1.1	Th	1448	4.0	1.2
	1654	5.7	1.8		1706	4.4	1.4
	2336	0.8	0.2				
3	0748	6.3	1.9	18	0030	1.9	0.6
Th	1224	4.4	1.3	F	0924	5.9	1.8
	1730	5.2	1.6		1606	3.7	1.1
					2106	3.7	1.1
4	0030	1.0	0.3	19	0336	2.1	0.6
F	0924	6.3	1.9	Sa	1036	6.1	1.9
	1618	4.5	1.4		1718	3.3	1.0
	1812	4.7	1.4		2230	3.9	1.2
5	0136	1.4	0.4	20	0448	1.9	0.6
Sa	1048	6.5	2.0	Su	1136	6.3	1.9
	1736	4.0	1.2		1806	2.9	0.9
	1912	4.2	1.3		2336	4.3	1.3
6	0430	1.6	0.5	21	0542	1.7	0.5
Su	1148	6.8	2.1	M	1218	6.4	2.0
	1830	3.5	1.1		1842	2.5	0.8
	2324	4.1	1.3				
7	0548	1.4	0.4	22	0024	4.8	1.5
M	1236	6.9	2.1	Tu	0630	1.5	0.5
	1906	3.0	0.9		1254	6.5	2.0
					1918	2.2	0.7
8	0030	4.7	1.4	23	0100	5.3	1.6
Tu	0648	1.2	0.4	W	0712	1.5	0.5
	1324	6.9	2.1		1330	6.4	2.0
	1948	2.5	0.8		1942	2.1	0.6
9	0118	5.3	1.6	24	0136	5.7	1.8
W	0736	1.2	0.4	Th	0748	1.6	0.5
	1400	6.7	2.1		1354	6.3	1.9
	2018	2.0	0.6		2012	1.9	0.6
10	0206	5.9	1.8	25	0206	6.2	1.9
Th	0824	1.4	0.4	F	0824	1.8	0.6
	1436	6.5	2.0		1418	6.1	1.9
	2054	1.6	0.5		2024	1.6	0.5
11	0254	6.4	2.0	26	0236	6.7	2.0
F	0912	1.7	0.5	Sa	0848	2.1	0.6
	1506	6.3	1.9		1430	6.0	1.8
	2118	1.3	0.4		2030	1.3	0.4
12	0336	6.8	2.1	27	0306	7.0	2.1
Sa	0954	2.1	0.7	Su	0912	2.4	0.7
	1530	6.0	1.8		1424	6.0	1.8
	2148	1.0	0.3		2042	0.9	0.3
13	0424	6.9	2.1	28	0342	7.3	2.2
Su	1030	2.6	0.8	M	0930	2.7	0.8
	1542	5.7	1.8		1442	6.0	1.8
	2206	0.9	0.3		2112	0.5	0.2
14	0506	6.8	2.1	29	0412	7.3	2.2
M	1106	3.1	0.9	Tu	1000	3.0	0.9
	1542	5.5	1.7		1512	5.9	1.8
	2230	0.9	0.3		2142	0.3	0.1
15	0554	6.6	2.0	30	0454	7.2	2.2
Tu	1200	3.5	1.1	W	1030	3.4	1.0
	1600	5.2	1.6		1542	5.7	1.7
	2254	1.1	0.3		2218	0.4	0.1

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m
1	0554	6.8	2.1
Th	1118	3.9	1.2
	1618	5.3	1.6
	2306	0.8	0.2
2	0730	6.4	1.9
F	1430	4.3	1.3
	1700	4.8	1.5
	2354	1.3	0.4
3	0906	6.1	1.9
Sa	1600	4.0	1.2
	1754	4.3	1.3
4	0118	2.0	0.6
Su	1024	6.2	1.9
	1706	3.4	1.1
	2218	4.0	1.2
5	0442	2.0	0.6
M	1124	6.3	1.9
	1754	2.8	0.9
	2330	4.8	1.5
6	0548	1.8	0.5
Tu	1212	6.3	1.9
	1830	2.3	0.7
7	0024	5.6	1.7
W	0642	1.7	0.5
	1248	6.2	1.9
	1906	1.8	0.5
8	0112	6.3	1.9
Th	0730	1.8	0.5
	1324	6.1	1.9
	1942	1.4	0.4
9	0154	6.9	2.1
F	0812	2.0	0.6
	1354	5.8	1.8
	2006	1.0	0.3
10	0236	7.2	2.2
Sa	0854	2.3	0.7
	1424	5.6	1.7
	2036	0.8	0.3
11	0312	7.4	2.3
Su	0936	2.6	0.8
	1436	5.5	1.7
	2054	0.7	0.2
12	0354	7.4	2.3
M	1012	2.9	0.9
	1436	5.3	1.6
	2112	0.7	0.2
13	0436	7.2	2.2
Tu	1054	3.2	1.0
	1454	5.2	1.6
	2136	0.8	0.2
14	0518	6.9	2.1
W	1136	3.4	1.1
	1524	5.0	1.5
	2206	1.0	0.3
15	0612	6.4	2.0
Th	1248	3.6	1.1
	1600	4.7	1.4
	2248	1.5	0.5
16	0724	6.0	1.8
F	1412	3.6	1.1
	1642	4.2	1.3
	2330	2.0	0.6
17	0836	5.8	1.8
Sa	1530	3.4	1.1
	1730	3.8	1.2
	1924	3.6	1.1
	2042	3.6	1.1
18	0300	2.5	0.8
Su	0948	5.7	1.8
	1630	3.1	0.9
	2206	4.0	1.2
19	0418	2.4	0.7
M	1048	5.8	1.8
	1718	2.6	0.8
	2312	4.7	1.4
20	0518	2.2	0.7
Tu	1136	5.9	1.8
	1800	2.3	0.7
	2354	5.3	1.6
21	0606	2.1	0.6
W	1212	5.9	1.8
	1830	2.0	0.6
22	0036	6.0	1.8
Th	0654	2.1	0.6
	1248	5.8	1.8
	1900	1.7	0.5
23	0112	6.5	2.0
F	0730	2.2	0.7
	1312	5.7	1.7
	1924	1.5	0.5
24	0148	7.0	2.1
Sa	0806	2.5	0.8
	1330	5.5	1.7
	1930	1.2	0.4
25	0218	7.4	2.3
Su	0842	2.7	0.8
	1324	5.5	1.7
	1942	0.8	0.3
26	0254	7.7	2.3
M	0912	3.0	0.9
	1330	5.5	1.7
	2006	0.5	0.1
27	0330	7.8	2.4
Tu	0942	3.2	1.0
	1400	5.6	1.7
	2036	0.3	0.1
28	0406	7.7	2.3
W	1012	3.4	1.1
	1436	5.5	1.7
	2112	0.3	0.1
29	0454	7.3	2.2
Th	1048	3.7	1.1
	1518	5.3	1.6
	2154	0.6	0.2
30	0554	6.9	2.1
F	1236	3.9	1.2
	1600	4.9	1.5
	2242	1.1	0.3
31	0712	6.4	1.9
Sa	1418	3.7	1.1
	1654	4.4	1.4
	2342	1.9	0.6

NOVEMBER

Day	Time h m	Height ft	Height m
1	0836	6.0	1.8
Su	1530	3.3	1.0
	1812	4.0	1.2
	1918	3.9	1.2
	2048	4.0	1.2
2	0306	2.5	0.8
M	0948	5.8	1.8
	1624	2.8	0.9
	2218	4.7	1.4
3	0430	2.5	0.8
Tu	1042	5.8	1.8
	1712	2.2	0.7
	2324	5.6	1.7
4	0536	2.4	0.7
W	1130	5.7	1.7
	1754	1.6	0.5
5	0012	6.4	2.0
Th	0630	2.4	0.7
	1212	5.6	1.7
	1830	1.2	0.4
6	0100	7.1	2.2
F	0718	2.5	0.8
	1248	5.4	1.7
	1906	0.9	0.3
7	0136	7.5	2.3
Sa	0800	2.7	0.8
	1318	5.3	1.6
	1930	0.8	0.2
8	0218	7.7	2.4
Su	0842	2.9	0.9
	1342	5.2	1.6
	1954	0.7	0.2
9	0254	7.7	2.4
M	0924	3.0	0.9
	1348	5.1	1.5
	2012	0.7	0.2
10	0336	7.6	2.3
Tu	1000	3.1	1.0
	1354	5.0	1.5
	2036	0.7	0.2
11	0412	7.4	2.3
W	1042	3.2	1.0
	1424	4.9	1.5
	2100	0.8	0.3
12	0454	7.0	2.1
Th	1124	3.2	1.0
	1500	4.8	1.5
	2136	1.1	0.3
13	0536	6.6	2.0
F	1218	3.3	1.0
	1542	4.6	1.4
	2218	1.5	0.5
14	0630	6.2	1.9
Sa	1324	3.3	1.0
	1630	4.3	1.3
	2300	2.0	0.6
15	0742	5.8	1.8
Su	1436	3.1	1.0
	1730	4.0	1.2
	1900	3.9	1.2
	1954	3.9	1.2
16	0006	2.7	0.8
M	0848	5.6	1.7
	1530	2.9	0.9
	2124	4.4	1.3
17	0330	2.9	0.9
Tu	0948	5.5	1.7
	1624	2.6	0.8
	2230	5.0	1.5
18	0442	2.9	0.9
W	1042	5.4	1.6
	1706	2.2	0.7
	2324	5.8	1.8
19	0542	2.9	0.9
Th	1124	5.3	1.6
	1742	1.9	0.6
20	0006	6.5	2.0
F	0630	2.9	0.9
	1154	5.2	1.6
	1812	1.6	0.5
21	0048	7.1	2.2
Sa	0712	3.1	0.9
	1218	5.1	1.5
	1830	1.3	0.4
22	0124	7.6	2.3
Su	0754	3.2	1.0
	1218	5.0	1.5
	1842	0.9	0.3
23	0206	7.9	2.4
M	0836	3.3	1.0
	1224	5.1	1.5
	1906	0.6	0.2
24	0242	8.0	2.5
Tu	0918	3.4	1.0
	1254	5.1	1.6
	1936	0.4	0.1
25	0324	8.0	2.4
W	1000	3.5	1.1
	1336	5.2	1.6
	2018	0.3	0.1
26	0412	7.8	2.4
Th	1042	3.5	1.1
	1418	5.1	1.6
	2100	0.5	0.2
27	0454	7.4	2.3
F	1136	3.4	1.0
	1506	4.9	1.5
	2148	1.0	0.3
28	0548	6.9	2.1
Sa	1236	3.3	1.0
	1606	4.7	1.4
	2242	1.6	0.5
29	0648	6.4	2.0
Su	1342	3.1	0.9
	1718	4.4	1.3
	2348	2.5	0.8
30	0754	5.9	1.8
M	1442	2.7	0.8
	2042	4.8	1.5

DECEMBER

Day	Time h m	Height ft	Height m
1	0254	3.0	0.9
Tu	0900	5.5	1.7
	1542	2.2	0.7
	2200	5.5	1.7
2	0412	3.1	1.0
W	1000	5.3	1.6
	1630	1.7	0.5
	2306	6.3	1.9
3	0524	3.1	1.0
Th	1048	5.1	1.6
	1718	1.3	0.4
	2359	7.0	2.1
4	0618	3.1	1.0
F	1136	5.0	1.5
	1754	1.0	0.3
5	0042	7.4	2.3
Sa	0706	3.1	1.0
	1212	4.9	1.5
	1836	0.8	0.3
6	0124	7.7	2.4
Su	0748	3.2	1.0
	1248	4.8	1.5
	1906	0.8	0.2
7	0200	7.8	2.4
M	0830	3.2	1.0
	1318	4.7	1.4
	1936	0.8	0.2
8	0242	7.7	2.4
Tu	0912	3.1	1.0
	1342	4.7	1.4
	2000	0.9	0.3
9	0318	7.6	2.3
W	0948	3.1	0.9
	1342	4.7	1.4
	2018	0.9	0.3
10	0354	7.4	2.3
Th	1030	3.0	0.9
	1412	4.7	1.4
	2048	1.0	0.3
11	0430	7.2	2.2
F	1106	2.9	0.9
	1454	4.7	1.4
	2124	1.1	0.4
12	0506	6.9	2.1
Sa	1142	2.9	0.9
	1542	4.7	1.4
	2200	1.5	0.5
13	0542	6.5	2.0
Su	1224	2.8	0.9
	1630	4.7	1.4
	2242	2.0	0.6
14	0618	6.1	1.9
M	1312	2.8	0.8
	1736	4.6	1.4
	2336	2.6	0.8
15	0648	5.6	1.7
Tu	1412	2.7	0.8
	2024	4.8	1.5
16	0042	3.3	1.0
W	0706	5.2	1.6
	1506	2.5	0.8
	2142	5.4	1.6
17	0354	3.7	1.1
Th	0742	5.0	1.5
	1554	2.2	0.7
	2242	6.0	1.8
18	0506	3.8	1.2
F	0824	4.8	1.5
	1636	1.8	0.6
	2336	6.7	2.1
19	0606	3.8	1.2
Sa	0912	4.6	1.4
	1706	1.5	0.5
20	0024	7.3	2.2
Su	0700	3.7	1.1
	1000	4.6	1.4
	1736	1.1	0.4
21	0112	7.7	2.4
M	0748	3.7	1.1
	1048	4.6	1.4
	1812	0.9	0.3
22	0154	8.0	2.4
Tu	0836	3.6	1.1
	1136	4.7	1.4
	1848	0.6	0.2
23	0236	8.0	2.5
W	0918	3.5	1.1
	1230	4.8	1.5
	1936	0.5	0.2
24	0324	8.0	2.4
Th	1000	3.3	1.0
	1330	4.8	1.5
	2024	0.6	0.2
25	0406	7.7	2.4
F	1042	3.1	0.9
	1430	4.9	1.5
	2112	0.9	0.3
26	0448	7.4	2.3
Sa	1118	2.8	0.9
	1542	5.0	1.5
	2200	1.4	0.4
27	0530	6.9	2.1
Su	1206	2.6	0.8
	1724	5.0	1.5
	2300	2.1	0.6
28	0612	6.3	1.9
M	1254	2.3	0.7
	1854	5.2	1.6
29	0042	2.9	0.9
Tu	0700	5.7	1.8
	1348	2.1	0.6
	2018	5.5	1.7
30	0230	3.5	1.1
W	0754	5.2	1.6
	1448	1.8	0.5
	2136	6.0	1.8
31	0348	3.7	1.1
Th	0900	4.8	1.5
	1548	1.5	0.5
	2242	6.5	2.0

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0212	23.3	7.1	16	0224	19.9	6.1
Th	0842	0.9	0.3	F	0848	4.1	1.3
	1448	20.0	6.1		1454	17.5	5.3
	2048	2.9	0.9		2048	5.7	1.7
2	0300	23.2	7.1	17	0254	19.8	6.0
F	0930	1.0	0.3	Sa	0918	4.3	1.3
	1536	19.9	6.1		1524	17.5	5.3
	2136	3.2	1.0		2118	5.8	1.8
3	0348	22.5	6.9	18	0324	19.5	5.9
Sa	1018	1.7	0.5	Su	0948	4.6	1.4
	1630	19.4	5.9		1554	17.4	5.3
	2224	4.0	1.2		2148	6.1	1.9
4	0442	21.4	6.5	19	0354	19.0	5.8
Su	1106	2.8	0.8	M	1018	5.0	1.5
	1718	18.7	5.7		1624	17.2	5.3
	2318	4.9	1.5		2218	6.4	1.9
5	0530	20.0	6.1	20	0430	18.3	5.6
M	1200	4.0	1.2	Tu	1048	5.5	1.7
	1812	17.9	5.5		1654	17.0	5.2
					2300	6.8	2.1
6	0018	6.0	1.8	21	0506	17.6	5.4
Tu	0624	18.4	5.6	W	1124	6.2	1.9
	1254	5.3	1.6		1736	16.8	5.1
	1906	17.2	5.3		2348	7.3	2.2
7	0118	7.0	2.1	22	0554	16.6	5.1
W	0724	16.9	5.2	Th	1212	6.8	2.1
	1348	6.4	1.9		1830	16.6	5.1
	2012	16.8	5.1				
8	0230	7.5	2.3	23	0048	7.7	2.4
Th	0836	15.8	4.8	F	0654	15.7	4.8
	1454	7.1	2.2		1312	7.4	2.3
	2118	16.7	5.1		1942	16.6	5.1
9	0342	7.6	2.3	24	0218	7.8	2.4
F	0948	15.3	4.7	Sa	0818	15.1	4.6
	1554	7.4	2.3		1436	7.7	2.3
	2218	17.0	5.2		2106	17.1	5.2
10	0448	7.2	2.2	25	0348	7.0	2.1
Sa	1054	15.3	4.7	Su	0954	15.4	4.7
	1654	7.4	2.3		1600	7.2	2.2
	2312	17.6	5.4		2224	18.4	5.6
11	0542	6.6	2.0	26	0506	5.5	1.7
Su	1148	15.6	4.7	M	1112	16.5	5.0
	1742	7.1	2.2		1712	6.0	1.8
	2359	18.2	5.6		2330	20.0	6.1
12	0630	5.8	1.8	27	0606	3.7	1.1
M	1236	16.0	4.9	Tu	1212	18.0	5.5
	1824	6.6	2.0		1812	4.5	1.4
13	0042	18.9	5.8	28	0030	21.7	6.6
Tu	0712	5.2	1.6	W	0700	2.0	0.6
	1312	16.6	5.1		1306	19.4	5.9
	1906	6.2	1.9		1900	3.2	1.0
14	0118	19.4	5.9	29	0118	23.1	7.0
W	0748	4.6	1.4	Th	0742	0.8	0.3
	1348	17.0	5.2		1354	20.5	6.3
	1942	5.9	1.8		1948	2.2	0.7
15	0154	19.8	6.0	30	0206	23.8	7.3
Th	0818	4.3	1.3	F	0830	0.2	0.1
	1418	17.3	5.3		1436	21.1	6.4
	2012	5.7	1.7		2036	1.8	0.5
				31	0248	23.9	7.3
				Sa	0912	0.3	0.1
					1518	21.2	6.5
					2118	1.9	0.6

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0330	23.2	7.1	16	0300	20.4	6.2
Su	0954	1.0	0.3	M	0918	3.5	1.1
	1600	20.8	6.3		1518	19.1	5.8
	2206	2.7	0.8		2124	4.4	1.3
2	0412	21.9	6.7	17	0330	19.9	6.1
M	1030	2.3	0.7	Tu	0942	4.0	1.2
	1642	19.9	6.1		1548	19.0	5.8
	2248	3.9	1.2		2154	4.8	1.5
3	0454	20.1	6.1	18	0400	19.1	5.8
Tu	1112	3.9	1.2	W	1012	4.7	1.4
	1724	18.7	5.7		1618	18.6	5.7
	2330	5.4	1.7		2230	5.4	1.7
4	0536	18.1	5.5	19	0436	18.0	5.5
W	1154	5.6	1.7	Th	1042	5.7	1.7
	1806	17.5	5.3		1700	18.0	5.5
					2312	6.4	1.9
5	0024	7.0	2.1	20	0518	16.6	5.1
Th	0624	16.2	4.9	F	1124	6.8	2.1
	1242	7.2	2.2		1748	17.3	5.3
	1900	16.3	5.0				
6	0130	8.3	2.5	21	0018	7.4	2.3
F	0730	14.5	4.4	Sa	0618	15.2	4.6
	1342	8.5	2.6		1230	8.0	2.4
	2018	15.5	4.7		1900	16.5	5.0
7	0300	8.9	2.7	22	0154	8.0	2.5
Sa	0906	13.6	4.1	Su	0800	14.2	4.3
	1506	9.2	2.8		1412	8.7	2.7
	2148	15.6	4.7		2048	16.6	5.1
8	0436	8.5	2.6	23	0348	7.3	2.2
Su	1042	13.8	4.2	M	1000	14.7	4.5
	1630	9.0	2.7		1600	8.0	2.4
	2300	16.3	5.0		2224	17.9	5.5
9	0536	7.4	2.3	24	0506	5.5	1.7
M	1148	14.7	4.5	Tu	1118	16.4	5.0
	1730	8.1	2.5		1712	6.2	1.9
	2354	17.4	5.3		2330	19.9	6.1
10	0624	6.3	1.9	25	0600	3.5	1.1
Tu	1230	15.7	4.8	W	1212	18.4	5.6
	1818	7.1	2.2		1806	4.3	1.3
11	0030	18.4	5.6	26	0024	21.8	6.6
W	0654	5.2	1.6	Th	0648	1.7	0.5
	1300	16.8	5.1		1254	20.1	6.1
	1854	6.1	1.9		1854	2.6	0.8
12	0106	19.4	5.9	27	0106	23.2	7.1
Th	0730	4.2	1.3	F	0730	0.6	0.2
	1330	17.7	5.4		1336	21.4	6.5
	1924	5.3	1.6		1936	1.4	0.4
13	0136	20.1	6.1	28	0148	23.9	7.3
F	0754	3.6	1.1	Sa	0806	0.0	0.0
	1400	18.4	5.6		1412	22.1	6.7
	1954	4.7	1.4		2018	1.0	0.3
14	0206	20.5	6.3				
Sa	0824	3.2	1.0				
	1430	18.9	5.8				
	2024	4.3	1.3				
15	0230	20.7	6.3				
Su	0854	3.2	1.0				
	1454	19.1	5.8				
	2054	4.2	1.3				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0230	23.8	7.3	16	0206	21.1	6.4
Su	0842	0.3	0.1	M	0818	2.6	0.8
	1448	22.1	6.8		1424	20.6	6.3
	2054	1.2	0.4		2030	2.9	0.9
2	0306	22.9	7.0	17	0236	20.9	6.4
M	0918	1.2	0.4	Tu	0842	2.9	0.9
	1524	21.6	6.6		1448	20.6	6.3
	2136	2.1	0.6		2100	3.1	1.0
3	0342	21.5	6.5	18	0306	20.2	6.2
Tu	0954	2.6	0.8	W	0912	3.5	1.1
	1600	20.5	6.3		1518	20.3	6.2
	2212	3.5	1.1		2130	3.7	1.1
4	0418	19.6	6.0	19	0336	19.2	5.9
W	1024	4.3	1.3	Th	0942	4.5	1.4
	1636	19.2	5.8		1554	19.7	6.0
	2248	5.2	1.6		2212	4.7	1.4
5	0454	17.5	5.3	20	0412	17.7	5.4
Th	1100	6.1	1.9	F	1018	5.7	1.8
	1712	17.6	5.4		1630	18.7	5.7
	2330	7.1	2.2		2300	6.0	1.8
6	0530	15.5	4.7	21	0506	16.1	4.9
F	1136	7.9	2.4	Sa	1106	7.2	2.2
	1754	16.1	4.9		1724	17.5	5.3
7	0030	8.7	2.7	22	0006	7.3	2.2
Sa	0618	13.6	4.2	Su	0612	14.5	4.4
	1224	9.4	2.9		1212	8.7	2.7
	1900	14.8	4.5		1848	16.4	5.0
8	0218	9.7	3.0	23	0200	7.9	2.4
Su	0818	12.5	3.8	M	0818	13.9	4.2
	1418	10.4	3.2		1418	9.2	2.8
	2112	14.5	4.4		2048	16.5	5.0
9	0424	9.1	2.8	24	0348	6.8	2.1
M	1048	13.2	4.0	Tu	1006	15.2	4.6
	1618	9.9	3.0		1600	7.9	2.4
	2242	15.5	4.7		2218	18.1	5.5
10	0524	7.8	2.4	25	0454	5.0	1.5
Tu	1136	14.6	4.5	W	1112	17.2	5.2
	1718	8.6	2.6		1706	5.8	1.8
	2330	16.8	5.1		2318	20.0	6.1
11	0600	6.4	2.0	26	0542	3.1	1.0
W	1206	16.0	4.9	Th	1154	19.2	5.8
	1800	7.2	2.2		1754	3.8	1.2
12	0006	18.1	5.5	27	0006	21.6	6.6
Th	0630	5.1	1.6	F	0624	1.7	0.5
	1236	17.4	5.3		1236	20.8	6.3
	1830	5.8	1.8		1836	2.2	0.7
13	0036	19.4	5.9	28	0048	22.7	6.9
F	0654	4.0	1.2	Sa	0706	0.9	0.3
	1300	18.6	5.7		1312	21.9	6.7
	1900	4.6	1.4		1918	1.2	0.4
14	0106	20.3	6.2	29	0124	23.1	7.0
Sa	0724	3.1	1.0	Su	0742	0.7	0.2
	1330	19.6	6.0		1348	22.5	6.9
	1930	3.7	1.1		1954	0.9	0.3
15	0136	20.9	6.4	30	0206	22.7	6.9
Su	0748	2.7	0.8	M	0812	1.0	0.3
	1354	20.2	6.2		1418	22.4	6.8
	2000	3.1	1.0		2030	1.3	0.4
				31	0236	21.8	6.6
				Tu	0848	2.0	0.6
					1454	21.7	6.6
					2106	2.3	0.7

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height	
	h m	ft	m
1	0312	20.3	6.2
W	0918	3.4	1.0
	1524	20.6	6.3
	2142	3.7	1.1
2	0342	18.5	5.7
Th	0942	5.0	1.5
	1554	19.3	5.9
	2212	5.4	1.7
3	0412	16.7	5.1
F	1012	6.7	2.0
	1624	17.7	5.4
	2254	7.2	2.2
4	0448	14.9	4.5
Sa	1042	8.3	2.5
	1706	16.2	4.9
	2342	8.7	2.7
5	0536	13.3	4.1
Su	1124	9.8	3.0
	1800	14.8	4.5
6	0124	9.7	3.0
M	0736	12.3	3.8
	1324	10.9	3.3
	2006	14.1	4.3
7	0336	9.2	2.8
Tu	1018	13.2	4.0
	1548	10.3	3.1
	2200	15.0	4.6
8	0436	7.9	2.4
W	1100	14.7	4.5
	1648	8.9	2.7
	2254	16.3	5.0
9	0518	6.6	2.0
Th	1130	16.2	4.9
	1724	7.3	2.2
	2330	17.7	5.4
10	0548	5.2	1.6
F	1154	17.7	5.4
	1754	5.7	1.8
	2359	18.9	5.8
11	0618	4.1	1.3
Sa	1224	19.1	5.8
	1830	4.3	1.3
12	0030	19.9	6.1
Su	0642	3.2	1.0
	1248	20.2	6.2
	1900	3.2	1.0
13	0106	20.6	6.3
M	0712	2.7	0.8
	1318	21.1	6.4
	1930	2.5	0.8
14	0136	20.9	6.4
Tu	0742	2.6	0.8
	1348	21.6	6.6
	2006	2.2	0.7
15	0206	20.6	6.3
W	0812	2.9	0.9
	1424	21.6	6.6
	2042	2.4	0.7
16	0242	19.9	6.1
Th	0848	3.6	1.1
	1500	21.2	6.5
	2118	3.1	1.0
17	0324	18.8	5.7
F	0924	4.7	1.4
	1536	20.3	6.2
	2206	4.2	1.3
18	0406	17.3	5.3
Sa	1006	6.1	1.9
	1624	19.1	5.8
	2300	5.6	1.7
19	0506	15.7	4.8
Su	1106	7.6	2.3
	1724	17.7	5.4
20	0018	6.7	2.1
M	0636	14.6	4.4
	1230	P.8	2.7
	1900	16.8	5.1
21	0200	6.9	2.1
Tu	0830	14.8	4.5
	1424	8.6	2.6
	2042	17.1	5.2
22	0330	5.9	1.8
W	0954	16.2	4.9
	1548	7.2	2.2
	2200	18.3	5.6
23	0430	4.6	1.4
Th	1048	17.9	5.5
	1648	5.4	1.7
	2300	19.7	6.0
24	0518	3.3	1.0
F	1130	19.6	6.0
	1736	3.8	1.2
	2342	20.8	6.3
25	0600	2.4	0.7
Sa	1212	20.9	6.4
	1818	2.6	0.8
26	0024	21.3	6.5
Su	0636	1.9	0.6
	1248	21.7	6.6
	1854	1.9	0.6
27	0106	21.4	6.5
M	0712	2.0	0.6
	1318	22.0	6.7
	1936	1.8	0.6
28	0136	20.9	6.4
Tu	0742	2.5	0.8
	1354	21.9	6.7
	2006	2.2	0.7
29	0212	20.0	6.1
W	0812	3.3	1.0
	1424	21.3	6.5
	2042	3.1	1.0
30	0242	18.8	5.7
Th	0842	4.5	1.4
	1454	20.3	6.2
	2118	4.3	1.3

MAY

Day	Time	Height	
	h m	ft	m
1	0318	17.4	5.3
F	0912	5.8	1.8
	1524	19.1	5.8
	2154	5.7	1.7
2	0348	15.9	4.9
Sa	0942	7.2	2.2
	1600	17.8	5.4
	2230	7.0	2.1
3	0424	14.6	4.5
Su	1012	8.5	2.6
	1636	16.5	5.0
	2324	8.2	2.5
4	0518	13.5	4.1
M	1106	9.7	3.0
	1730	15.3	4.7
5	0042	9.0	2.7
Tu	0654	12.9	3.9
	1236	10.6	3.2
	1900	14.6	4.4
6	0218	8.9	2.7
W	0848	13.4	4.1
	1436	10.3	3.1
	2042	14.8	4.5
7	0330	8.1	2.5
Th	0954	14.6	4.5
	1548	9.1	2.8
	2148	15.7	4.8
8	0412	7.0	2.1
F	1030	16.1	4.9
	1636	7.6	2.3
	2236	16.9	5.2
9	0454	5.8	1.8
Sa	1106	17.6	5.4
	1712	6.1	1.9
	2318	18.0	5.5
10	0530	4.8	1.5
Su	1136	19.1	5.8
	1748	4.6	1.4
	2354	19.1	5.8
11	0600	3.9	1.2
M	1212	20.4	6.2
	1830	3.3	1.0
12	0030	19.8	6.0
Tu	0636	3.3	1.0
	1248	21.4	6.5
	1906	2.4	0.7
13	0112	20.1	6.1
W	0712	3.1	0.9
	1324	22.0	6.7
	1948	2.0	0.6
14	0148	19.9	6.1
Th	0754	3.2	1.0
	1406	22.1	6.8
	2030	2.1	0.6
15	0236	19.4	5.9
F	0830	3.8	1.2
	1448	21.8	6.6
	2112	2.7	0.8
16	0318	18.5	5.6
Sa	0918	4.8	1.5
	1536	20.9	6.4
	2206	3.6	1.1
17	0412	17.4	5.3
Su	1012	5.9	1.8
	1630	19.8	6.0
	2306	4.6	1.4
18	0518	16.3	5.0
M	1112	7.1	2.2
	1736	18.7	5.7
19	0024	5.4	1.7
Tu	0636	15.8	4.8
	1236	7.7	2.4
	1854	17.8	5.4
20	0142	5.7	1.7
W	0800	16.0	4.9
	1400	7.6	2.3
	2018	17.7	5.4
21	0254	5.3	1.6
Th	0918	17.0	5.2
	1518	6.7	2.1
	2130	18.1	5.5
22	0354	4.8	1.5
F	1012	18.2	5.5
	1618	5.6	1.7
	2230	18.7	5.7
23	0442	4.2	1.3
Sa	1100	19.3	5.9
	1712	4.5	1.4
	2318	19.1	5.8
24	0530	3.8	1.2
Su	1142	20.2	6.2
	1754	3.7	1.1
	2359	19.3	5.9
25	0606	3.7	1.1
M	1218	20.8	6.3
	1836	3.2	1.0
26	0042	19.2	5.9
Tu	0642	3.8	1.2
	1254	21.0	6.4
	1918	3.2	1.0
27	0118	18.8	5.7
W	0718	4.1	1.3
	1330	20.9	6.4
	1954	3.4	1.1
28	0154	18.2	5.6
Th	0748	4.7	1.4
	1406	20.5	6.3
	2030	4.0	1.2
29	0230	17.5	5.3
F	0824	5.5	1.7
	1436	19.8	6.1
	2106	4.7	1.4
30	0306	16.6	5.1
Sa	0854	6.3	1.9
	1512	19.0	5.8
	2142	5.6	1.7
31	0342	15.8	4.8
Su	0930	7.3	2.2
	1542	18.1	5.5
	2218	6.4	2.0

JUNE

Day	Time	Height	
	h m	ft	m
1	0418	15.1	4.6
M	1006	8.2	2.5
	1624	17.1	5.2
	2306	7.2	2.2
2	0506	14.5	4.4
Tu	1054	9.0	2.7
	1706	16.3	5.0
	2354	7.7	2.4
3	0606	14.1	4.3
W	1154	9.5	2.9
	1806	15.6	4.8
4	0054	8.0	2.4
Th	0712	14.2	4.3
	1312	9.6	2.9
	1912	15.3	4.7
5	0200	7.9	2.4
F	0818	14.9	4.5
	1424	9.1	2.8
	2024	15.5	4.7
6	0300	7.4	2.3
Sa	0918	15.9	4.9
	1530	8.0	2.5
	2130	16.0	4.9
7	0348	6.7	2.0
Su	1006	17.3	5.3
	1624	6.7	2.0
	2224	16.9	5.2
8	0436	5.8	1.8
M	1054	18.7	5.7
	1712	5.2	1.6
	2318	17.7	5.4
9	0524	4.9	1.5
Tu	1136	20.0	6.1
	1800	3.9	1.2
10	0006	18.5	5.7
W	0606	4.2	1.3
	1224	21.2	6.5
	1848	2.8	0.8
11	0054	19.1	5.8
Th	0654	3.7	1.1
	1306	22.1	6.7
	1936	2.0	0.6
12	0142	19.4	5.9
F	0742	3.5	1.1
	1354	22.5	6.9
	2024	1.7	0.5
13	0230	19.4	5.9
Sa	0830	3.6	1.1
	1442	22.5	6.9
	2112	1.8	0.6
14	0324	19.0	5.8
Su	0918	4.1	1.2
	1536	21.9	6.7
	2206	2.4	0.7
15	0412	18.5	5.6
M	1012	4.8	1.5
	1624	21.1	6.4
	2300	3.1	1.0
16	0512	17.9	5.5
Tu	1112	5.6	1.7
	1724	20.0	6.1
	2359	4.0	1.2
17	0612	17.4	5.3
W	1218	6.3	1.9
	1830	18.9	5.8
18	0106	4.8	1.5
Th	0724	17.2	5.2
	1324	6.7	2.0
	1936	17.9	5.5
19	0206	5.3	1.6
F	0830	17.3	5.3
	1442	6.7	2.1
	2048	17.4	5.3
20	0312	5.6	1.7
Sa	0930	17.7	5.4
	1548	6.4	1.9
	2154	17.1	5.2
21	0406	5.7	1.8
Su	1030	18.3	5.6
	1648	5.8	1.8
	2254	17.1	5.2
22	0500	5.7	1.7
M	1118	18.9	5.8
	1742	5.2	1.6
	2342	17.1	5.2
23	0542	5.6	1.7
Tu	1200	19.4	5.9
	1824	4.8	1.5
24	0030	17.2	5.2
W	0624	5.5	1.7
	1242	19.8	6.0
	1906	4.5	1.4
25	0112	17.2	5.2
Th	0700	5.5	1.7
	1318	20.0	6.1
	1948	4.3	1.3
26	0148	17.2	5.2
F	0742	5.6	1.7
	1354	20.0	6.1
	2024	4.3	1.3
27	0224	17.0	5.2
Sa	0812	5.8	1.8
	1430	19.8	6.0
	2054	4.5	1.4
28	0300	16.8	5.1
Su	0848	6.2	1.9
	1500	19.4	5.9
	2130	4.9	1.5
29	0330	16.6	5.1
M	0924	6.6	2.0
	1530	18.8	5.7
	2206	5.4	1.6
30	0406	16.2	5.0
Tu	0954	7.1	2.2
	1606	18.2	5.5
	2236	5.9	1.8

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height	
	h m	ft	m
1	0442	15.9	4.9
W	1030	7.6	2.3
	1642	17.5	5.3
	2312	6.4	2.0
2	0518	15.7	4.8
Th	1112	8.0	2.5
	1718	16.8	5.1
	2348	6.9	2.1
3	0600	15.6	4.8
F	1200	8.4	2.6
	1806	16.1	4.9
4	0036	7.3	2.2
Sa	0654	15.6	4.8
	1306	8.5	2.6
	1906	15.6	4.8
5	0136	7.5	2.3
Su	0800	16.0	4.9
	1424	8.2	2.5
	2024	15.3	4.7
6	0242	7.5	2.3
M	0906	16.8	5.1
	1542	7.4	2.3
	2142	15.6	4.8
7	0354	7.0	2.1
Tu	1012	18.0	5.5
	1648	6.1	1.9
	2248	16.4	5.0
8	0454	6.1	1.9
W	1112	19.4	5.9
	1748	4.5	1.4
	2354	17.5	5.3
9	0554	5.1	1.5
Th	1212	20.9	6.4
	1842	3.0	0.9
10	0048	18.6	5.7
F	0642	4.0	1.2
	1300	22.2	6.8
	1930	1.8	0.5
11	0136	19.5	5.9
Sa	0736	3.2	1.0
	1348	23.1	7.0
	2018	1.0	0.3
12	0224	20.1	6.1
Su	0824	2.7	0.8
	1436	23.4	7.1
	2106	0.7	0.2
13	0312	20.4	6.2
M	0912	2.7	0.8
	1524	23.2	7.1
	2154	1.0	0.3
14	0400	20.2	6.2
Tu	1000	3.1	0.9
	1612	22.3	6.8
	2242	1.9	0.6
15	0448	19.6	6.0
W	1048	3.9	1.2
	1706	20.9	6.4
	2330	3.1	1.0
16	0536	18.8	5.7
Th	1142	5.0	1.5
	1754	19.3	5.9
17	0018	4.5	1.4
F	0630	17.9	5.5
	1242	6.2	1.9
	1848	17.6	5.4
18	0112	5.9	1.8
Sa	0736	17.2	5.2
	1354	7.1	2.2
	2000	16.1	4.9
19	0218	7.0	2.1
Su	0842	16.8	5.1
	1512	7.5	2.3
	2118	15.3	4.7
20	0324	7.5	2.3
M	0954	16.9	5.2
	1630	7.3	2.2
	2236	15.1	4.6
21	0430	7.6	2.3
Tu	1100	17.4	5.3
	1730	6.7	2.0
	2336	15.4	4.7
22	0530	7.3	2.2
W	1148	18.1	5.5
	1818	5.8	1.8
23	0024	16.0	4.9
Th	0618	6.7	2.1
	1236	18.9	5.8
	1900	5.1	1.6
24	0106	16.6	5.1
F	0654	6.1	1.9
	1312	19.5	6.0
	1936	4.4	1.4
25	0142	17.2	5.2
Sa	0730	5.7	1.7
	1342	19.9	6.1
	2012	4.0	1.2
26	0212	17.6	5.4
Su	0806	5.3	1.6
	1418	20.1	6.1
	2042	3.8	1.2
27	0242	17.8	5.4
M	0836	5.2	1.6
	1442	20.1	6.1
	2106	3.9	1.2
28	0312	17.9	5.5
Tu	0906	5.3	1.6
	1512	19.8	6.0
	2136	4.3	1.3
29	0336	17.8	5.4
W	0936	5.6	1.7
	1542	19.3	5.9
	2200	4.7	1.4
30	0406	17.6	5.4
Th	1006	6.0	1.8
	1612	18.6	5.7
	2230	5.3	1.6
31	0436	17.4	5.3
F	1036	6.5	2.0
	1642	17.7	5.4
	2300	6.0	1.8

AUGUST

Day	Time	Height	
	h m	ft	m
1	0506	17.1	5.2
Sa	1112	7.1	2.2
	1718	16.8	5.1
	2336	6.8	2.1
2	0554	16.7	5.1
Su	1206	7.7	2.4
	1812	15.6	4.8
3	0024	7.6	2.3
M	0654	16.3	5.0
	1324	8.2	2.5
	1924	14.7	4.5
4	0142	8.2	2.5
Tu	0818	16.3	5.0
	1506	8.0	2.4
	2112	14.5	4.4
5	0318	8.1	2.5
W	0948	17.3	5.3
	1636	6.6	2.0
	2242	15.5	4.7
6	0442	7.1	2.2
Th	1100	18.9	5.8
	1742	4.7	1.4
	2348	17.1	5.2
7	0548	5.4	1.7
F	1206	20.8	6.3
	1836	2.8	0.9
8	0042	18.9	5.8
Sa	0642	3.7	1.1
	1254	22.5	6.9
	1924	1.2	0.4
9	0130	20.3	6.2
Su	0730	2.3	0.7
	1342	23.7	7.2
	2006	0.2	0.1
10	0212	21.4	6.5
M	0812	1.4	0.4
	1424	24.1	7.4
	2048	-0.1	0.0
11	0254	21.9	6.7
Tu	0854	1.2	0.4
	1506	23.9	7.3
	2130	0.3	0.1
12	0336	21.7	6.6
W	0942	1.7	0.5
	1548	22.8	6.9
	2206	1.4	0.4
13	0418	20.9	6.4
Th	1024	2.8	0.9
	1630	21.1	6.4
	2248	3.0	0.9
14	0500	19.8	6.0
F	1106	4.3	1.3
	1712	19.1	5.8
	2330	4.8	1.5
15	0542	18.4	5.6
Sa	1200	6.1	1.9
	1800	16.9	5.2
16	0018	6.7	2.0
Su	0636	16.9	5.2
	1300	7.7	2.3
	1900	14.9	4.6
17	0118	8.3	2.5
M	0748	15.8	4.8
	1430	8.7	2.6
	2036	13.7	4.2
18	0242	9.2	2.8
Tu	0924	15.6	4.7
	1618	8.4	2.6
	2230	13.7	4.2
19	0418	9.1	2.8
W	1048	16.2	4.9
	1730	7.4	2.3
	2342	14.7	4.5
20	0524	8.2	2.5
Th	1142	17.3	5.3
	1812	6.3	1.9
21	0024	15.8	4.8
F	0606	7.2	2.2
	1224	18.4	5.6
	1848	5.2	1.6
22	0054	16.9	5.2
Sa	0642	6.1	1.9
	1254	19.4	5.9
	1918	4.2	1.3
23	0124	17.9	5.5
Su	0718	5.2	1.6
	1324	20.1	6.1
	1942	3.5	1.1
24	0148	18.6	5.7
M	0748	4.5	1.4
	1354	20.6	6.3
	2012	3.2	1.0
25	0212	19.1	5.8
Tu	0812	4.1	1.3
	1418	20.7	6.3
	2036	3.2	1.0
26	0242	19.4	5.9
W	0842	4.0	1.2
	1448	20.4	6.2
	2100	3.5	1.1
27	0306	19.4	5.9
Th	0906	4.2	1.3
	1512	19.9	6.1
	2124	4.0	1.2
28	0330	19.2	5.8
F	0936	4.6	1.4
	1542	19.1	5.8
	2148	4.7	1.4
29	0354	18.8	5.7
Sa	1006	5.3	1.6
	1612	18.1	5.5
	2218	5.6	1.7
30	0430	18.2	5.6
Su	1042	6.2	1.9
	1648	16.8	5.1
	2248	6.7	2.0
31	0512	17.4	5.3
M	1130	7.3	2.2
	1736	15.3	4.7
	2336	7.9	2.4

SEPTEMBER

Day	Time	Height	
	h m	ft	m
1	0612	16.5	5.0
Tu	1254	8.3	2.5
	1900	14.0	4.3
2	0106	9.0	2.8
W	0748	16.0	4.9
	1500	8.1	2.5
	2112	13.9	4.3
3	0312	8.9	2.7
Th	0942	16.9	5.2
	1636	6.5	2.0
	2248	15.6	4.7
4	0442	7.2	2.2
F	1100	18.9	5.8
	1736	4.4	1.3
	2342	17.7	5.4
5	0542	5.1	1.6
Sa	1154	21.0	6.4
	1818	2.4	0.7
6	0030	19.7	6.0
Su	0630	3.1	0.9
	1242	22.7	6.9
	1906	0.8	0.3
7	0112	21.4	6.5
M	0712	1.5	0.5
	1324	23.8	7.3
	1942	0.0	0.0
8	0148	22.4	6.8
Tu	0754	0.6	0.2
	1406	24.1	7.3
	2018	-0.2	-0.1
9	0230	22.8	7.0
W	0836	0.5	0.2
	1442	23.6	7.2
	2100	0.5	0.2
10	0306	22.5	6.9
Th	0912	1.1	0.4
	1524	22.2	6.8
	2136	1.8	0.5
11	0342	21.6	6.6
F	0954	2.5	0.8
	1600	20.4	6.2
	2206	3.5	1.1
12	0418	20.1	6.1
Sa	1036	4.3	1.3
	1636	18.2	5.6
	2242	5.4	1.7
13	0454	18.5	5.6
Su	1118	6.2	1.9
	1718	16.0	4.9
	2324	7.4	2.3
14	0542	16.8	5.1
M	1218	8.1	2.5
	1812	14.0	4.3
15	0012	9.2	2.8
Tu	0642	15.3	4.7
	1354	9.3	2.8
	2006	12.7	3.9
16	0200	10.3	3.1
W	0848	14.7	4.5
	1600	9.0	2.7
	2230	13.3	4.1
17	0406	9.9	3.0
Th	1030	15.5	4.7
	1706	7.7	2.4
	2324	14.6	4.5
18	0506	8.7	2.6
F	1118	16.7	5.1
	1748	6.4	2.0
	2359	16.0	4.9
19	0548	7.3	2.2
Sa	1154	18.0	5.5
	1818	5.2	1.6
20	0024	17.4	5.3
Su	0618	5.9	1.8
	1224	19.1	5.8
	1842	4.2	1.3
21	0048	18.5	5.7
M	0648	4.8	1.5
	1254	20.0	6.1
	1912	3.4	1.0
22	0118	19.5	5.9
Tu	0718	3.9	1.2
	1324	20.5	6.3
	1936	3.0	0.9
23	0142	20.1	6.1
W	0748	3.3	1.0
	1348	20.7	6.3
	2000	2.9	0.9
24	0206	20.5	6.3
Th	0812	3.1	0.9
	1418	20.5	6.3
	2024	3.2	1.0
25	0230	20.5	6.3
F	0842	3.2	1.0
	1448	19.9	6.1
	2054	3.8	1.2
26	0300	20.3	6.2
Sa	0912	3.7	1.1
	1518	19.0	5.8
	2118	4.6	1.4
27	0330	19.8	6.0
Su	0948	4.6	1.4
	1548	17.8	5.4
	2148	5.7	1.7
28	0406	18.9	5.8
M	1030	5.7	1.8
	1630	16.3	5.0
	2224	7.0	2.1
29	0448	17.8	5.4
Tu	1124	7.1	2.2
	1730	14.7	4.5
	2324	8.5	2.6
30	0600	16.6	5.1
W	1300	8.0	2.4
	1912	13.7	4.2

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUERTO MONTT, CHILE, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0112	9.4	2.9	16	0324	10.2	3.1
Th	0748	16.1	4.9	F	0936	15.0	4.6
	1500	7.5	2.3		1618	8.0	2.4
	2124	14.4	4.4		2242	14.7	4.5
2	0318	8.7	2.7	17	0430	9.0	2.7
F	0936	17.2	5.2	Sa	1036	16.1	4.9
	1618	5.8	1.8		1700	6.8	2.1
	2236	16.4	5.0		2312	16.1	4.9
3	0436	6.7	2.0	18	0512	7.5	2.3
Sa	1048	19.1	5.8	Su	1112	17.3	5.3
	1712	3.9	1.2		1730	5.6	1.7
	2330	18.5	5.7		2342	17.5	5.3
4	0530	4.5	1.4	19	0542	6.1	1.9
Su	1136	20.9	6.4	M	1148	18.4	5.6
	1800	2.2	0.7		1800	4.6	1.4
5	0006	20.5	6.2	20	0006	18.7	5.7
M	0612	2.6	0.8	Tu	0612	4.8	1.5
	1224	22.3	6.8		1218	19.3	5.9
	1836	1.1	0.3		1830	3.8	1.2
6	0048	21.9	6.7	21	0036	19.8	6.0
Tu	0654	1.2	0.4	W	0642	3.8	1.2
	1306	23.0	7.0		1248	19.9	6.1
	1918	0.6	0.2		1854	3.3	1.0
7	0124	22.8	7.0	22	0106	20.6	6.3
W	0736	0.6	0.2	Th	0718	3.1	0.9
	1342	23.0	7.0		1318	20.1	6.1
	1954	0.7	0.2		1924	3.2	1.0
8	0200	23.0	7.0	23	0130	21.1	6.4
Th	0812	0.7	0.2	F	0748	2.7	0.8
	1418	22.2	6.8		1354	20.0	6.1
	2024	1.5	0.5		1954	3.4	1.0
9	0236	22.5	6.9	24	0206	21.3	6.5
F	0848	1.5	0.5	Sa	0824	2.8	0.9
	1454	20.9	6.4		1424	19.4	5.9
	2100	2.8	0.9		2024	4.0	1.2
10	0312	21.5	6.6	25	0236	21.0	6.4
Sa	0924	2.9	0.9	Su	0900	3.3	1.0
	1530	19.1	5.8		1500	18.5	5.6
	2130	4.4	1.3		2100	4.9	1.5
11	0342	20.0	6.1	26	0312	20.3	6.2
Su	1006	4.6	1.4	M	0942	4.2	1.3
	1606	17.2	5.2		1542	17.3	5.3
	2206	6.2	1.9		2136	6.0	1.8
12	0418	18.4	5.6	27	0354	19.4	5.9
M	1048	6.4	2.0	Tu	1030	5.3	1.6
	1648	15.3	4.7		1636	15.9	4.9
	2242	7.9	2.4		2230	7.3	2.2
13	0500	16.7	5.1	28	0448	18.1	5.5
Tu	1142	8.1	2.5	W	1136	6.4	2.0
	1736	13.6	4.2		1748	14.8	4.5
	2330	9.5	2.9		2342	8.5	2.6
14	0600	15.3	4.7	29	0606	17.1	5.2
W	1312	9.2	2.8	Th	1312	7.0	2.1
	1930	12.7	3.9		1930	14.6	4.4
15	0112	10.6	3.2	30	0124	8.9	2.7
Th	0748	14.4	4.4	F	0748	16.8	5.1
	1512	9.0	2.7		1442	6.4	2.0
	2148	13.3	4.1		2106	15.6	4.8
				31	0306	7.8	2.4
				Sa	0918	17.7	5.4
					1554	5.2	1.6
					2212	17.3	5.3

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0412	6.1	1.9	16	0412	8.0	2.5
Su	1024	19.0	5.8	M	1012	16.3	5.0
	1648	3.9	1.2		1630	6.4	2.0
	2300	19.1	5.8		2248	17.1	5.2
2	0506	4.4	1.3	17	0454	6.7	2.0
M	1112	20.2	6.2	Tu	1100	17.3	5.3
	1730	2.8	0.9		1712	5.5	1.7
	2342	20.6	6.3		2324	18.4	5.6
3	0554	2.9	0.9	18	0536	5.4	1.6
Tu	1200	21.0	6.4	W	1136	18.1	5.5
	1812	2.1	0.7		1742	4.7	1.4
					2354	19.6	6.0
4	0024	21.7	6.6	19	0612	4.2	1.3
W	0636	1.9	0.6	Th	1212	18.8	5.7
	1242	21.3	6.5		1818	4.1	1.3
	1848	2.0	0.6				
5	0100	22.3	6.8	20	0030	20.6	6.3
Th	0712	1.6	0.5	F	0648	3.3	1.0
	1318	21.0	6.4		1254	19.2	5.8
	1924	2.3	0.7		1854	3.8	1.2
6	0136	22.3	6.8	21	0106	21.3	6.5
F	0754	1.8	0.6	Sa	0730	2.8	0.9
	1400	20.2	6.2		1330	19.2	5.9
	2000	3.0	0.9		1930	3.9	1.2
7	0212	21.9	6.7	22	0142	21.6	6.6
Sa	0830	2.6	0.8	Su	0812	2.6	0.8
	1436	19.1	5.8		1412	18.9	5.8
	2030	4.1	1.2		2012	4.2	1.3
8	0242	20.9	6.4	23	0224	21.5	6.6
Su	0912	3.7	1.1	M	0854	2.9	0.9
	1512	17.8	5.4		1500	18.3	5.6
	2106	5.3	1.6		2054	4.8	1.5
9	0318	19.8	6.0	24	0312	21.0	6.4
M	0948	5.0	1.5	Tu	0942	3.5	1.1
	1548	16.4	5.0		1548	17.5	5.3
	2142	6.8	2.1		2142	5.7	1.7
10	0354	18.4	5.6	25	0400	20.1	6.1
Tu	1030	6.4	1.9	W	1036	4.3	1.3
	1630	15.1	4.6		1648	16.7	5.1
	2218	8.1	2.5		2242	6.6	2.0
11	0436	17.0	5.2	26	0500	19.2	5.8
W	1124	7.5	2.3	Th	1142	5.0	1.5
	1718	14.0	4.3		1754	16.1	4.9
	2306	9.3	2.8		2354	7.3	2.2
12	0530	15.8	4.8	27	0606	18.3	5.6
Th	1230	8.4	2.6	F	1254	5.5	1.7
	1836	13.4	4.1		1912	16.1	4.9
13	0024	10.1	3.1	28	0112	7.5	2.3
F	0642	15.0	4.6	Sa	0730	17.8	5.4
	1348	8.6	2.6		1406	5.5	1.7
	2018	13.6	4.2		2030	16.7	5.1
14	0206	10.1	3.1	29	0236	7.0	2.1
Sa	0812	14.9	4.5	Su	0842	17.9	5.5
	1500	8.1	2.5		1512	5.1	1.6
	2124	14.6	4.4		2136	17.7	5.4
15	0324	9.3	2.8	30	0342	6.0	1.8
Su	0924	15.5	4.7	M	0954	18.3	5.6
	1554	7.3	2.2		1612	4.6	1.4
	2212	15.8	4.8		2230	18.9	5.8

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0442	4.9	1.5	16	0400	7.5	2.3
Tu	1048	18.7	5.7	W	1000	15.9	4.9
	1700	4.1	1.3		1612	6.7	2.0
	2318	19.9	6.1		2230	17.7	5.4
2	0530	4.0	1.2	17	0454	6.3	1.9
W	1136	19.0	5.8	Th	1054	16.7	5.1
	1742	3.9	1.2		1700	5.9	1.8
	2359	20.7	6.3		2318	19.0	5.8
3	0618	3.3	1.0	18	0542	5.0	1.5
Th	1224	19.0	5.8	F	1148	17.5	5.3
	1824	3.8	1.2		1748	5.2	1.6
4	0036	21.1	6.4	19	0006	20.2	6.2
F	0700	3.1	0.9	Sa	0630	3.8	1.2
	1306	18.8	5.7		1236	18.1	5.5
	1900	4.0	1.2		1836	4.6	1.4
5	0118	21.2	6.5	20	0048	21.2	6.5
Sa	0742	3.1	1.0	Su	0718	2.9	0.9
	1342	18.4	5.6		1324	18.7	5.7
	1942	4.5	1.4		1918	4.1	1.3
6	0154	20.9	6.4	21	0136	21.9	6.7
Su	0818	3.5	1.1	M	0806	2.2	0.7
	1424	17.8	5.4		1412	19.0	5.8
	2018	5.1	1.6		2006	3.9	1.2
7	0230	20.4	6.2	22	0224	22.2	6.8
M	0900	4.2	1.3	Tu	0854	2.0	0.6
	1500	17.1	5.2		1500	19.0	5.8
	2054	5.9	1.8		2054	4.0	1.2
8	0306	19.6	6.0	23	0312	22.1	6.7
Tu	0936	5.0	1.5	W	0942	2.1	0.7
	1536	16.3	5.0		1548	18.8	5.7
	2130	6.7	2.1		2148	4.4	1.3
9	0342	18.7	5.7	24	0400	21.6	6.6
W	1018	5.8	1.8	Th	1030	2.7	0.8
	1618	15.6	4.8		1642	18.5	5.6
	2206	7.6	2.3		2242	4.9	1.5
10	0418	17.7	5.4	25	0454	20.6	6.3
Th	1054	6.5	2.0	F	1124	3.4	1.0
	1700	15.1	4.6		1736	18.0	5.5
	2248	8.4	2.6		2336	5.6	1.7
11	0500	16.8	5.1	26	0548	19.5	6.0
F	1142	7.2	2.2	Sa	1224	4.3	1.3
	1748	14.7	4.5		1836	17.7	5.4
	2342	9.0	2.7				
12	0548	16.0	4.9	27	0042	6.2	1.9
Sa	1230	7.6	2.3	Su	0654	18.4	5.6
	1842	14.6	4.4		1324	5.1	1.6
					1942	17.5	5.3
13	0042	9.3	2.8	28	0154	6.6	2.0
Su	0648	15.5	4.7	M	0806	17.5	5.3
	1330	7.8	2.4		1430	5.7	1.7
	1948	14.9	4.5		2048	17.6	5.4
14	0154	9.2	2.8	29	0306	6.5	2.0
M	0754	15.3	4.7	Tu	0918	16.9	5.2
	1424	7.7	2.4		1530	5.9	1.8
	2048	15.5	4.7		2154	18.0	5.5
15	0300	8.6	2.6	30	0418	6.1	1.9
Tu	0900	15.4	4.7	W	1024	16.8	5.1
	1524	7.3	2.2		1630	6.0	1.8
	2142	16.5	5.0		2254	18.7	5.7
				31	0518	5.4	1.7
				Th	1124	16.9	5.1
					1724	5.8	1.8
					2342	19.3	5.9

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0530	0.5	0.2	16	0548	1.2	0.4
Th	1118	4.0	1.2	F	1136	3.8	1.2
	1648	1.0	0.3		1700	1.6	0.5
	2324	6.5	2.0		2336	5.6	1.7
2	0618	0.5	0.2	17	0624	1.2	0.4
F	1206	4.1	1.3	Sa	1206	3.8	1.2
	1736	1.1	0.3		1736	1.7	0.5
3	0018	6.3	1.9	18	0006	5.4	1.7
Sa	0706	0.6	0.2	Su	0654	1.3	0.4
	1300	4.1	1.3		1242	3.9	1.2
	1830	1.3	0.4		1812	1.8	0.5
4	0106	6.0	1.8	19	0042	5.2	1.6
Su	0754	0.8	0.2	M	0724	1.4	0.4
	1354	4.1	1.3		1318	3.9	1.2
	1924	1.6	0.5		1854	1.9	0.6
5	0154	5.5	1.7	20	0118	5.0	1.5
M	0842	1.0	0.3	Tu	0754	1.5	0.5
	1448	4.1	1.3		1400	3.9	1.2
	2030	1.9	0.6		1936	2.1	0.6
6	0248	5.0	1.5	21	0154	4.7	1.4
Tu	0930	1.3	0.4	W	0830	1.6	0.5
	1548	4.2	1.3		1442	4.0	1.2
	2136	2.1	0.7		2030	2.2	0.7
7	0342	4.4	1.4	22	0236	4.3	1.3
W	1018	1.6	0.5	Th	0906	1.8	0.5
	1654	4.3	1.3		1536	4.1	1.3
	2300	2.3	0.7		2142	2.4	0.7
8	0454	3.9	1.2	23	0330	3.9	1.2
Th	1112	1.8	0.5	F	0954	1.9	0.6
	1800	4.4	1.4		1642	4.4	1.3
					2312	2.4	0.7
9	0030	2.3	0.7	24	0448	3.6	1.1
F	0606	3.6	1.1	Sa	1054	1.9	0.6
	1206	1.9	0.6		1754	4.7	1.4
	1906	4.6	1.4				
10	0154	2.1	0.7	25	0048	2.1	0.7
Sa	0718	3.4	1.0	Su	0618	3.4	1.0
	1300	2.0	0.6		1200	1.9	0.6
	1954	4.9	1.5		1900	5.1	1.6
11	0254	1.9	0.6	26	0200	1.8	0.5
Su	0818	3.4	1.0	M	0736	3.4	1.1
	1342	1.9	0.6		1306	1.7	0.5
	2042	5.1	1.6		2000	5.6	1.7
12	0336	1.7	0.5	27	0300	1.3	0.4
M	0906	3.4	1.0	Tu	0836	3.6	1.1
	1430	1.9	0.6		1406	1.5	0.5
	2118	5.3	1.6		2054	6.0	1.8
13	0412	1.6	0.5	28	0348	1.0	0.3
Tu	0948	3.5	1.1	W	0930	3.9	1.2
	1506	1.8	0.5		1500	1.2	0.4
	2154	5.4	1.7		2142	6.3	1.9
14	0448	1.4	0.4	29	0430	0.7	0.2
W	1024	3.6	1.1	Th	1018	4.1	1.3
	1548	1.7	0.5		1554	1.0	0.3
	2230	5.5	1.7		2230	6.5	2.0
15	0518	1.3	0.4	30	0512	0.5	0.2
Th	1100	3.7	1.1	F	1106	4.4	1.3
	1624	1.6	0.5		1642	0.9	0.3
	2300	5.6	1.7		2312	6.4	2.0
				31	0554	0.5	0.1
				Sa	1148	4.5	1.4
					1730	1.0	0.3
					2359	6.2	1.9

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0636	0.6	0.2	16	0612	1.1	0.4
Su	1230	4.6	1.4	M	1206	4.4	1.3
	1818	1.1	0.3		1754	1.4	0.4
2	0042	5.8	1.8	17	0012	5.2	1.6
M	0712	0.8	0.2	Tu	0642	1.2	0.4
	1318	4.6	1.4		1242	4.4	1.4
	1906	1.3	0.4		1836	1.5	0.5
3	0124	5.3	1.6	18	0048	4.9	1.5
Tu	0754	1.1	0.3	W	0706	1.4	0.4
	1406	4.6	1.4		1318	4.5	1.4
	2000	1.7	0.5		1918	1.7	0.5
4	0206	4.7	1.4	19	0124	4.5	1.4
W	0830	1.4	0.4	Th	0736	1.6	0.5
	1454	4.5	1.4		1400	4.5	1.4
	2106	2.1	0.6		2012	2.0	0.6
5	0300	4.1	1.2	20	0206	4.0	1.2
Th	0912	1.8	0.5	F	0812	1.7	0.5
	1554	4.4	1.3		1454	4.5	1.4
	2224	2.4	0.7		2124	2.2	0.7
6	0400	3.5	1.1	21	0300	3.6	1.1
F	1006	2.1	0.6	Sa	0900	1.9	0.6
	1712	4.4	1.3		1606	4.6	1.4
					2306	2.2	0.7
7	0012	2.4	0.7	22	0430	3.2	1.0
Sa	0530	3.2	1.0	Su	1006	2.1	0.6
	1112	2.3	0.7		1730	4.8	1.5
	1830	4.5	1.4				
8	0148	2.3	0.7	23	0048	2.0	0.6
Su	0712	3.1	0.9	M	0618	3.1	1.0
	1224	2.3	0.7		1136	2.1	0.6
	1936	4.7	1.4		1848	5.1	1.6
9	0248	2.0	0.6	24	0200	1.6	0.5
M	0824	3.2	1.0	Tu	0742	3.3	1.0
	1330	2.2	0.7		1254	1.9	0.6
	2024	4.9	1.5		1948	5.5	1.7
10	0324	1.7	0.5	25	0248	1.2	0.4
Tu	0906	3.4	1.0	W	0836	3.7	1.1
	1418	2.0	0.6		1400	1.6	0.5
	2100	5.1	1.6		2042	5.8	1.8
11	0400	1.5	0.5	26	0330	0.9	0.3
W	0942	3.6	1.1	Th	0924	4.1	1.2
	1500	1.8	0.6		1454	1.2	0.4
	2136	5.3	1.6		2130	6.1	1.9
12	0424	1.3	0.4	27	0412	0.6	0.2
Th	1012	3.8	1.2	F	1006	4.4	1.4
	1536	1.7	0.5		1548	1.0	0.3
	2212	5.5	1.7		2212	6.1	1.9
13	0448	1.2	0.4	28	0448	0.5	0.2
F	1036	4.0	1.2	Sa	1042	4.7	1.4
	1612	1.5	0.5		1630	0.8	0.3
	2242	5.5	1.7		2254	6.0	1.8
14	0518	1.1	0.3				
Sa	1106	4.2	1.3				
	1648	1.4	0.4				
	2312	5.5	1.7				
15	0542	1.1	0.3				
Su	1136	4.3	1.3				
	1718	1.4	0.4				
	2342	5.4	1.7				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0524	0.6	0.2	16	0500	1.0	0.3
Su	1124	5.0	1.5	M	1106	4.8	1.5
	1718	0.8	0.2		1706	1.1	0.3
	2336	5.7	1.8		2318	5.2	1.6
2	0554	0.7	0.2	17	0530	1.0	0.3
M	1200	5.1	1.5	Tu	1136	4.9	1.5
	1800	1.0	0.3		1742	1.1	0.4
					2348	4.9	1.5
3	0012	5.3	1.6	18	0554	1.2	0.4
Tu	0630	0.9	0.3	W	1212	5.0	1.5
	1242	5.0	1.5		1824	1.2	0.4
	1848	1.2	0.4				
4	0054	4.8	1.5	19	0024	4.6	1.4
W	0700	1.2	0.4	Th	0624	1.3	0.4
	1324	4.9	1.5		1248	5.0	1.5
	1936	1.6	0.5		1912	1.5	0.5
5	0136	4.2	1.3	20	0106	4.1	1.3
Th	0736	1.6	0.5	F	0700	1.5	0.5
	1406	4.7	1.4		1330	5.0	1.5
	2036	2.0	0.6		2006	1.7	0.5
6	0218	3.7	1.1	21	0154	3.7	1.1
F	0812	1.9	0.6	Sa	0736	1.8	0.5
	1500	4.5	1.4		1430	4.9	1.5
	2154	2.3	0.7		2130	1.9	0.6
7	0312	3.2	1.0	22	0300	3.2	1.0
Sa	0854	2.2	0.7	Su	0830	2.0	0.6
	1612	4.3	1.3		1542	4.8	1.5
	2342	2.4	0.7		2306	1.9	0.6
8	0506	2.9	0.9	23	0448	3.1	0.9
Su	1006	2.5	0.8	M	0948	2.2	0.7
	1748	4.3	1.3		1706	4.9	1.5
9	0130	2.2	0.7	24	0036	1.7	0.5
M	0712	3.0	0.9	Tu	0630	3.2	1.0
	1148	2.5	0.8		1130	2.2	0.7
	1900	4.5	1.4		1830	5.1	1.5
10	0218	1.9	0.6	25	0136	1.4	0.4
Tu	0812	3.2	1.0	W	0736	3.5	1.1
	1312	2.4	0.7		1254	1.9	0.6
	1954	4.7	1.4		1930	5.3	1.6
11	0254	1.7	0.5	26	0224	1.1	0.3
W	0848	3.5	1.1	Th	0824	4.0	1.2
	1400	2.1	0.7		1400	1.6	0.5
	2036	4.9	1.5		2024	5.5	1.7
12	0318	1.5	0.5	27	0300	0.9	0.3
Th	0912	3.8	1.2	F	0906	4.4	1.3
	1442	1.9	0.6		1448	1.2	0.4
	2106	5.1	1.6		2112	5.6	1.7
13	0348	1.3	0.4	28	0336	0.7	0.2
F	0942	4.0	1.2	Sa	0942	4.8	1.5
	1518	1.6	0.5		1536	1.0	0.3
	2142	5.2	1.6		2154	5.5	1.7
14	0412	1.1	0.4	29	0412	0.7	0.2
Sa	1006	4.3	1.3	Su	1018	5.1	1.6
	1554	1.4	0.4		1624	0.8	0.3
	2212	5.3	1.6		2230	5.4	1.6
15	0436	1.0	0.3	30	0442	0.8	0.2
Su	1036	4.6	1.4	M	1054	5.3	1.6
	1630	1.2	0.4		1706	0.9	0.3
	2242	5.3	1.6		2312	5.1	1.5
				31	0518	0.9	0.3
				Tu	1130	5.3	1.6
					1748	1.0	0.3
					2348	4.7	1.4

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0548	1.1	0.4	16	0518	1.2	0.4
W	1206	5.3	1.6	Th	1142	5.5	1.7
	1830	1.2	0.4		1818	1.1	0.3
2	0024	4.2	1.3	17	0012	4.2	1.3
Th	0618	1.4	0.4	F	0554	1.3	0.4
	1248	5.1	1.6		1230	5.5	1.7
	1918	1.6	0.5		1912	1.2	0.4
3	0106	3.8	1.2	18	0100	3.8	1.2
F	0648	1.7	0.5	Sa	0630	1.6	0.5
	1330	4.9	1.5		1318	5.4	1.7
	2018	1.9	0.6		2012	1.4	0.4
4	0148	3.3	1.0	19	0200	3.4	1.1
Sa	0718	2.0	0.6	Su	0718	1.8	0.6
	1418	4.6	1.4		1418	5.2	1.6
	2130	2.2	0.7		2130	1.5	0.5
5	0254	3.0	0.9	20	0318	3.2	1.0
Su	0800	2.3	0.7	M	0824	2.1	0.6
	1524	4.4	1.3		1530	5.1	1.5
	2312	2.2	0.7		2254	1.5	0.5
6	0454	2.9	0.9	21	0500	3.2	1.0
M	0912	2.6	0.8	Tu	0954	2.3	0.7
	1648	4.2	1.3		1648	5.0	1.5
7	0042	2.1	0.6	22	0006	1.4	0.4
Tu	0648	3.1	0.9	W	0618	3.5	1.1
	1112	2.7	0.8		1130	2.2	0.7
	1812	4.3	1.3		1806	5.0	1.5
8	0130	1.9	0.6	23	0106	1.2	0.4
W	0736	3.3	1.0	Th	0718	3.9	1.2
	1236	2.5	0.8		1248	2.0	0.6
	1906	4.5	1.4		1906	5.1	1.5
9	0200	1.7	0.5	24	0148	1.1	0.3
Th	0806	3.6	1.1	F	0800	4.3	1.3
	1330	2.2	0.7		1348	1.6	0.5
	1948	4.6	1.4		2000	5.1	1.5
10	0230	1.5	0.5	25	0230	1.0	0.3
F	0836	4.0	1.2	Sa	0842	4.7	1.4
	1412	1.9	0.6		1442	1.3	0.4
	2030	4.8	1.5		2048	5.0	1.5
11	0254	1.3	0.4	26	0300	1.0	0.3
Sa	0900	4.3	1.3	Su	0918	5.1	1.6
	1454	1.6	0.5		1530	1.1	0.4
	2100	4.9	1.5		2130	4.9	1.5
12	0324	1.2	0.4	27	0336	1.0	0.3
Su	0930	4.7	1.4	M	0954	5.3	1.6
	1530	1.3	0.4		1612	1.0	0.3
	2136	5.0	1.5		2212	4.6	1.4
13	0348	1.1	0.3	28	0406	1.1	0.3
M	1000	5.0	1.5	Tu	1030	5.5	1.7
	1606	1.1	0.3		1654	1.0	0.3
	2212	4.9	1.5		2248	4.4	1.3
14	0418	1.0	0.3	29	0436	1.2	0.4
Tu	1030	5.2	1.6	W	1106	5.5	1.7
	1648	1.0	0.3		1736	1.2	0.4
	2248	4.8	1.5		2324	4.1	1.2
15	0448	1.1	0.3	30	0506	1.4	0.4
W	1106	5.4	1.7	Th	1142	5.4	1.7
	1730	1.0	0.3		1824	1.3	0.4
	2330	4.5	1.4				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0006	3.7	1.1	16	0006	3.9	1.2
F	0536	1.6	0.5	Sa	0536	1.3	0.4
	1218	5.3	1.6		1218	5.9	1.8
	1912	1.6	0.5		1912	1.0	0.3
2	0048	3.4	1.1	17	0100	3.7	1.1
Sa	0612	1.8	0.6	Su	0618	1.6	0.5
	1300	5.1	1.5		1306	5.8	1.8
	2000	1.8	0.5		2012	1.1	0.3
3	0136	3.2	1.0	18	0206	3.5	1.1
Su	0648	2.1	0.7	M	0718	1.8	0.6
	1348	4.8	1.5		1406	5.6	1.7
	2106	1.9	0.6		2118	1.2	0.4
4	0248	3.1	0.9	19	0318	3.5	1.1
M	0730	2.4	0.7	Tu	0824	2.1	0.6
	1442	4.5	1.4		1512	5.3	1.6
	2218	2.0	0.6		2224	1.2	0.4
5	0418	3.1	0.9	20	0436	3.6	1.1
Tu	0842	2.6	0.8	W	0948	2.2	0.7
	1554	4.4	1.3		1624	5.1	1.5
	2330	2.0	0.6		2324	1.2	0.4
6	0548	3.2	1.0	21	0548	3.9	1.2
W	1024	2.7	0.8	Th	1112	2.2	0.7
	1700	4.3	1.3		1730	4.8	1.5
7	0018	1.9	0.6	22	0018	1.2	0.4
Th	0642	3.5	1.1	F	0642	4.2	1.3
	1148	2.6	0.8		1230	2.0	0.6
	1806	4.3	1.3		1836	4.7	1.4
8	0100	1.7	0.5	23	0106	1.2	0.4
F	0718	3.8	1.2	Sa	0730	4.6	1.4
	1248	2.4	0.7		1336	1.8	0.5
	1854	4.4	1.3		1936	4.5	1.4
9	0130	1.6	0.5	24	0148	1.3	0.4
Sa	0748	4.2	1.3	Su	0812	5.0	1.5
	1336	2.0	0.6		1430	1.6	0.5
	1942	4.4	1.4		2024	4.3	1.3
10	0200	1.4	0.4	25	0224	1.3	0.4
Su	0818	4.6	1.4	M	0854	5.2	1.6
	1424	1.7	0.5		1524	1.4	0.4
	2024	4.5	1.4		2106	4.1	1.3
11	0230	1.3	0.4	26	0300	1.3	0.4
M	0854	5.0	1.5	Tu	0930	5.4	1.7
	1506	1.4	0.4		1606	1.3	0.4
	2100	4.5	1.4		2148	4.0	1.2
12	0306	1.2	0.4	27	0330	1.4	0.4
Tu	0924	5.3	1.6	W	1006	5.5	1.7
	1548	1.2	0.4		1648	1.3	0.4
	2142	4.4	1.4		2230	3.8	1.2
13	0336	1.1	0.4	28	0406	1.5	0.5
W	1006	5.6	1.7	Th	1042	5.6	1.7
	1636	1.0	0.3		1736	1.3	0.4
	2224	4.3	1.3		2312	3.6	1.1
14	0412	1.1	0.4	29	0436	1.6	0.5
Th	1042	5.9	1.8	F	1124	5.5	1.7
	1724	0.9	0.3		1818	1.4	0.4
	2312	4.1	1.3		2354	3.5	1.1
15	0454	1.2	0.4	30	0512	1.7	0.5
F	1130	6.0	1.8	Sa	1200	5.4	1.7
	1818	0.9	0.3		1900	1.5	0.5
				31	0036	3.4	1.0
				Su	0548	1.9	0.6
					1242	5.2	1.6
					1948	1.6	0.5

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0130	3.3	1.0	16	0154	3.8	1.2
M	0630	2.1	0.7	Tu	0712	1.6	0.5
	1324	5.0	1.5		1354	5.7	1.8
	2036	1.7	0.5		2048	0.9	0.3
2	0224	3.2	1.0	17	0254	3.9	1.2
Tu	0718	2.3	0.7	W	0818	1.8	0.6
	1412	4.8	1.5		1448	5.3	1.6
	2124	1.8	0.5		2148	1.1	0.3
3	0330	3.3	1.0	18	0400	4.0	1.2
W	0818	2.5	0.8	Th	0930	2.0	0.6
	1500	4.5	1.4		1554	4.9	1.5
	2212	1.8	0.6		2242	1.2	0.4
4	0430	3.4	1.0	19	0506	4.2	1.3
Th	0930	2.6	0.8	F	1054	2.1	0.6
	1554	4.3	1.3		1700	4.5	1.4
	2300	1.8	0.6		2330	1.4	0.4
5	0530	3.6	1.1	20	0606	4.4	1.4
F	1048	2.6	0.8	Sa	1212	2.1	0.6
	1654	4.2	1.3		1806	4.2	1.3
	2342	1.8	0.5				
6	0612	3.9	1.2	21	0024	1.5	0.5
Sa	1200	2.4	0.7	Su	0700	4.7	1.4
	1754	4.1	1.3		1324	1.9	0.6
					1906	3.9	1.2
7	0024	1.7	0.5	22	0106	1.6	0.5
Su	0654	4.3	1.3	M	0748	5.0	1.5
	1300	2.2	0.7		1430	1.8	0.5
	1848	4.1	1.2		2006	3.7	1.1
8	0100	1.6	0.5	23	0148	1.6	0.5
M	0736	4.7	1.4	Tu	0836	5.2	1.6
	1354	1.9	0.6		1524	1.6	0.5
	1942	4.0	1.2		2054	3.6	1.1
9	0142	1.4	0.4	24	0230	1.6	0.5
Tu	0818	5.2	1.6	W	0918	5.3	1.6
	1448	1.5	0.5		1606	1.5	0.5
	2030	4.0	1.2		2142	3.5	1.1
10	0224	1.3	0.4	25	0306	1.6	0.5
W	0900	5.6	1.7	Th	0954	5.5	1.7
	1536	1.2	0.4		1648	1.4	0.4
	2124	4.0	1.2		2224	3.5	1.1
11	0300	1.2	0.4	26	0342	1.6	0.5
Th	0942	5.9	1.8	F	1030	5.5	1.7
	1630	1.0	0.3		1730	1.3	0.4
	2212	4.0	1.2		2306	3.5	1.1
12	0348	1.2	0.4	27	0424	1.7	0.5
F	1030	6.2	1.9	Sa	1106	5.5	1.7
	1718	0.8	0.2		1806	1.3	0.4
	2306	3.9	1.2		2342	3.5	1.1
13	0436	1.2	0.4	28	0500	1.7	0.5
Sa	1118	6.3	1.9	Su	1142	5.4	1.7
	1812	0.7	0.2		1842	1.3	0.4
	2359	3.9	1.2				
14	0524	1.3	0.4	29	0024	3.5	1.1
Su	1206	6.3	1.9	M	0536	1.8	0.6
	1900	0.7	0.2		1224	5.3	1.6
					1918	1.4	0.4
15	0054	3.8	1.2	30	0106	3.5	1.1
M	0618	1.4	0.4	Tu	0618	1.9	0.6
	1300	6.1	1.9		1300	5.1	1.6
	1954	0.8	0.2		1954	1.5	0.5

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0148	3.5	1.1
W	0700	2.1	0.6
	1336	4.9	1.5
	2030	1.6	0.5
2	0230	3.6	1.1
Th	0748	2.3	0.7
	1418	4.6	1.4
	2112	1.7	0.5
3	0318	3.6	1.1
F	0842	2.4	0.7
	1500	4.3	1.3
	2148	1.7	0.5
4	0412	3.8	1.2
Sa	0954	2.5	0.8
	1554	4.0	1.2
	2230	1.8	0.5
5	0512	4.0	1.2
Su	1112	2.4	0.7
	1654	3.8	1.2
	2318	1.8	0.5
6	0606	4.4	1.3
M	1230	2.2	0.7
	1800	3.6	1.1
7	0006	1.7	0.5
Tu	0700	4.8	1.5
	1342	1.9	0.6
	1912	3.6	1.1
8	0100	1.6	0.5
W	0748	5.2	1.6
	1436	1.5	0.5
	2012	3.6	1.1
9	0148	1.4	0.4
Th	0842	5.6	1.7
	1530	1.2	0.4
	2112	3.7	1.1
10	0242	1.2	0.4
F	0930	6.0	1.8
	1618	0.9	0.3
	2206	3.8	1.2
11	0336	1.1	0.3
Sa	1018	6.3	1.9
	1706	0.6	0.2
	2254	4.0	1.2
12	0424	1.0	0.3
Su	1106	6.4	2.0
	1754	0.5	0.1
	2342	4.1	1.2
13	0518	1.0	0.3
M	1154	6.3	1.9
	1842	0.5	0.1
14	0036	4.2	1.3
Tu	0606	1.1	0.3
	1242	6.1	1.9
	1924	0.6	0.2
15	0124	4.2	1.3
W	0706	1.3	0.4
	1330	5.6	1.7
	2012	0.8	0.2

Day	Time h m	Height ft	Height m
16	0218	4.3	1.3
Th	0800	1.5	0.5
	1424	5.1	1.6
	2100	1.0	0.3
17	0318	4.3	1.3
F	0906	1.8	0.6
	1518	4.6	1.4
	2148	1.3	0.4
18	0418	4.4	1.3
Sa	1024	2.0	0.6
	1618	4.0	1.2
	2242	1.6	0.5
19	0524	4.4	1.4
Su	1154	2.1	0.7
	1730	3.6	1.1
	2336	1.8	0.5
20	0630	4.6	1.4
M	1318	2.0	0.6
	1848	3.3	1.0
21	0030	1.9	0.6
Tu	0730	4.8	1.5
	1430	1.8	0.6
	2000	3.2	1.0
22	0124	1.9	0.6
W	0818	5.0	1.5
	1524	1.6	0.5
	2054	3.2	1.0
23	0212	1.8	0.6
Th	0906	5.2	1.6
	1600	1.5	0.5
	2136	3.3	1.0
24	0254	1.7	0.5
F	0942	5.3	1.6
	1636	1.3	0.4
	2212	3.4	1.1
25	0336	1.6	0.5
Sa	1018	5.4	1.7
	1706	1.2	0.4
	2248	3.6	1.1
26	0412	1.5	0.5
Su	1048	5.4	1.7
	1736	1.1	0.4
	2324	3.7	1.1
27	0448	1.5	0.5
M	1124	5.4	1.6
	1806	1.1	0.4
	2354	3.8	1.2
28	0524	1.5	0.5
Tu	1154	5.3	1.6
	1836	1.2	0.4
29	0030	3.8	1.2
W	0600	1.6	0.5
	1230	5.1	1.6
	1906	1.3	0.4
30	0106	3.9	1.2
Th	0642	1.7	0.5
	1300	4.8	1.5
	1936	1.4	0.4
31	0142	3.9	1.2
F	0724	1.9	0.6
	1336	4.5	1.4
	2006	1.5	0.5

AUGUST

Day	Time h m	Height ft	Height m
1	0218	3.9	1.2
Sa	0812	2.1	0.6
	1412	4.1	1.3
	2042	1.7	0.5
2	0312	4.0	1.2
Su	0912	2.2	0.7
	1500	3.7	1.1
	2124	1.8	0.5
3	0412	4.1	1.3
M	1042	2.3	0.7
	1606	3.4	1.0
	2218	1.8	0.6
4	0524	4.4	1.3
Tu	1218	2.1	0.7
	1736	3.2	1.0
	2324	1.8	0.6
5	0630	4.7	1.4
W	1336	1.8	0.5
	1900	3.2	1.0
6	0030	1.7	0.5
Th	0730	5.2	1.6
	1430	1.4	0.4
	2012	3.3	1.0
7	0136	1.5	0.5
F	0824	5.6	1.7
	1524	1.0	0.3
	2106	3.6	1.1
8	0236	1.2	0.4
Sa	0918	6.0	1.8
	1606	0.6	0.2
	2154	3.9	1.2
9	0324	1.0	0.3
Su	1000	6.2	1.9
	1648	0.4	0.1
	2236	4.2	1.3
10	0418	0.8	0.2
M	1048	6.2	1.9
	1730	0.3	0.1
	2324	4.4	1.4
11	0506	0.7	0.2
Tu	1136	6.1	1.9
	1806	0.4	0.1
12	0006	4.6	1.4
W	0554	0.8	0.2
	1218	5.7	1.7
	1848	0.5	0.2
13	0054	4.6	1.4
Th	0648	1.0	0.3
	1300	5.2	1.6
	1930	0.8	0.2
14	0136	4.6	1.4
F	0742	1.3	0.4
	1348	4.6	1.4
	2006	1.1	0.4
15	0230	4.5	1.4
Sa	0842	1.6	0.5
	1442	4.0	1.2
	2054	1.5	0.5

Day	Time h m	Height ft	Height m
16	0330	4.4	1.3
Su	1000	2.0	0.6
	1542	3.4	1.1
	2142	1.8	0.6
17	0442	4.3	1.3
M	1142	2.1	0.6
	1706	3.1	0.9
	2248	2.0	0.6
18	0600	4.4	1.3
Tu	1318	2.0	0.6
	1854	3.0	0.9
	2359	2.1	0.6
19	0712	4.5	1.4
W	1424	1.7	0.5
	2006	3.0	0.9
20	0112	2.0	0.6
Th	0806	4.7	1.4
	1506	1.5	0.5
	2048	3.2	1.0
21	0200	1.9	0.6
F	0848	4.9	1.5
	1542	1.3	0.4
	2124	3.4	1.0
22	0248	1.7	0.5
Sa	0924	5.1	1.5
	1606	1.2	0.4
	2154	3.6	1.1
23	0324	1.5	0.5
Su	0954	5.2	1.6
	1636	1.0	0.3
	2224	3.8	1.2
24	0400	1.3	0.4
M	1024	5.2	1.6
	1700	1.0	0.3
	2254	4.0	1.2
25	0436	1.2	0.4
Tu	1054	5.2	1.6
	1724	1.0	0.3
	2318	4.1	1.3
26	0506	1.2	0.4
W	1124	5.1	1.5
	1754	1.0	0.3
	2348	4.2	1.3
27	0542	1.2	0.4
Th	1200	4.9	1.5
	1818	1.1	0.3
28	0018	4.3	1.3
F	0618	1.3	0.4
	1230	4.5	1.4
	1848	1.2	0.4
29	0054	4.3	1.3
Sa	0700	1.5	0.5
	1306	4.2	1.3
	1912	1.4	0.4
30	0136	4.3	1.3
Su	0748	1.7	0.5
	1342	3.7	1.1
	1948	1.6	0.5
31	0224	4.3	1.3
M	0900	2.0	0.6
	1430	3.3	1.0
	2030	1.8	0.5

SEPTEMBER

Day	Time h m	Height ft	Height m
1	0330	4.3	1.3
Tu	1030	2.0	0.6
	1554	3.0	0.9
	2130	1.9	0.6
2	0448	4.4	1.4
W	1212	1.8	0.6
	1742	2.9	0.9
	2300	2.0	0.6
3	0612	4.7	1.4
Th	1330	1.5	0.5
	1912	3.1	0.9
4	0024	1.8	0.5
F	0718	5.1	1.6
	1418	1.1	0.3
	2006	3.4	1.0
5	0130	1.4	0.4
Sa	0812	5.4	1.7
	1500	0.7	0.2
	2054	3.8	1.2
6	0230	1.1	0.3
Su	0900	5.7	1.7
	1542	0.5	0.1
	2136	4.2	1.3
7	0318	0.8	0.2
M	0948	5.8	1.8
	1618	0.3	0.1
	2218	4.6	1.4
8	0406	0.5	0.2
Tu	1030	5.8	1.8
	1654	0.3	0.1
	2254	4.8	1.5
9	0454	0.5	0.1
W	1112	5.5	1.7
	1730	0.4	0.1
	2336	5.0	1.5
10	0542	0.6	0.2
Th	1154	5.1	1.6
	1806	0.6	0.2
11	0018	5.0	1.5
F	0630	0.8	0.3
	1236	4.6	1.4
	1842	0.9	0.3
12	0100	4.9	1.5
Sa	0718	1.1	0.4
	1318	4.0	1.2
	1918	1.2	0.4
13	0148	4.7	1.4
Su	0818	1.5	0.5
	1406	3.5	1.1
	1954	1.6	0.5
14	0242	4.4	1.4
M	0936	1.9	0.6
	1512	3.0	0.9
	2042	2.0	0.6
15	0354	4.2	1.3
Tu	1130	2.0	0.6
	1700	2.8	0.8
	2154	2.2	0.7

Day	Time h m	Height ft	Height m
16	0524	4.2	1.3
W	1306	1.8	0.6
	1900	2.8	0.9
	2336	2.3	0.7
17	0642	4.3	1.3
Th	1400	1.6	0.5
	1954	3.1	0.9
18	0054	2.1	0.7
F	0736	4.4	1.4
	1436	1.4	0.4
	2030	3.3	1.0
19	0148	1.9	0.6
Sa	0818	4.6	1.4
	1500	1.2	0.4
	2100	3.6	1.1
20	0230	1.6	0.5
Su	0854	4.8	1.5
	1524	1.1	0.3
	2124	3.9	1.2
21	0306	1.4	0.4
M	0924	4.9	1.5
	1548	1.0	0.3
	2148	4.1	1.3
22	0342	1.2	0.4
Tu	0954	4.9	1.5
	1618	0.9	0.3
	2218	4.4	1.3
23	0412	1.0	0.3
W	1024	4.9	1.5
	1642	0.9	0.3
	2248	4.5	1.4
24	0448	1.0	0.3
Th	1054	4.7	1.4
	1706	0.9	0.3
	2318	4.7	1.4
25	0524	1.0	0.3
F	1130	4.5	1.4
	1736	1.0	0.3
	2348	4.7	1.4
26	0606	1.1	0.3
Sa	1200	4.2	1.3
	1800	1.2	0.4
27	0024	4.8	1.5
Su	0648	1.3	0.4
	1242	3.8	1.2
	1830	1.4	0.4
28	0106	4.7	1.4
M	0748	1.5	0.5
	1324	3.4	1.0
	1906	1.6	0.5
29	0154	4.6	1.4
Tu	0854	1.7	0.5
	1430	3.0	0.9
	1954	1.8	0.6
30	0306	4.5	1.4
W	1030	1.7	0.5
	1612	2.8	0.9
	2106	2.0	0.6

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

VALPARAISO, CHILE, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0430	4.5	1.4	16	0554	4.1	1.3
Th	1206	1.5	0.5	F	1312	1.6	0.5
	1800	2.9	0.9		1924	3.2	1.0
	2254	2.1	0.6				
2	0554	4.7	1.4	17	0030	2.3	0.7
F	1306	1.2	0.4	Sa	0648	4.2	1.3
	1906	3.3	1.0		1342	1.4	0.4
					1954	3.5	1.1
3	0024	1.8	0.6	18	0124	2.0	0.6
Sa	0700	5.0	1.5	Su	0736	4.3	1.3
	1354	0.9	0.3		1412	1.3	0.4
	1954	3.7	1.1		2024	3.8	1.2
4	0130	1.4	0.4	19	0206	1.7	0.5
Su	0754	5.2	1.6	M	0812	4.5	1.4
	1430	0.7	0.2		1436	1.1	0.4
	2036	4.2	1.3		2048	4.2	1.3
5	0224	1.0	0.3	20	0242	1.5	0.5
M	0842	5.3	1.6	Tu	0848	4.5	1.4
	1506	0.5	0.2		1506	1.0	0.3
	2112	4.6	1.4		2112	4.5	1.4
6	0312	0.7	0.2	21	0318	1.2	0.4
Tu	0924	5.3	1.6	W	0918	4.6	1.4
	1542	0.4	0.1		1530	1.0	0.3
	2154	5.0	1.5		2142	4.8	1.5
7	0400	0.6	0.2	22	0354	1.0	0.3
W	1006	5.1	1.6	Th	0954	4.5	1.4
	1618	0.5	0.1		1554	0.9	0.3
	2230	5.2	1.6		2212	5.0	1.5
8	0442	0.5	0.2	23	0430	0.9	0.3
Th	1048	4.9	1.5	F	1030	4.4	1.3
	1648	0.6	0.2		1624	1.0	0.3
	2306	5.3	1.6		2248	5.2	1.6
9	0530	0.6	0.2	24	0512	0.9	0.3
F	1130	4.5	1.4	Sa	1106	4.1	1.3
	1724	0.8	0.3		1654	1.0	0.3
	2348	5.3	1.6		2324	5.3	1.6
10	0612	0.9	0.3	25	0554	1.0	0.3
Sa	1206	4.0	1.2	Su	1148	3.8	1.2
	1754	1.1	0.3		1724	1.2	0.4
					2359	5.3	1.6
11	0024	5.1	1.6	26	0648	1.1	0.3
Su	0706	1.2	0.4	M	1230	3.5	1.1
	1248	3.5	1.1		1800	1.4	0.4
	1830	1.4	0.4				
12	0112	4.9	1.5	27	0048	5.2	1.6
M	0806	1.5	0.5	Tu	0748	1.2	0.4
	1342	3.1	1.0		1330	3.2	1.0
	1906	1.8	0.5		1848	1.6	0.5
13	0200	4.6	1.4	28	0142	5.1	1.5
Tu	0918	1.8	0.5	W	0900	1.4	0.4
	1454	2.8	0.9		1442	3.0	0.9
	1948	2.1	0.6		1948	1.9	0.6
14	0306	4.3	1.3	29	0248	4.9	1.5
W	1054	1.8	0.6	Th	1018	1.4	0.4
	1648	2.7	0.8		1618	3.0	0.9
	2112	2.4	0.7		2112	2.1	0.7
15	0430	4.1	1.3	30	0406	4.8	1.5
Th	1218	1.7	0.5	F	1130	1.2	0.4
	1830	2.9	0.9		1742	3.2	1.0
	2300	2.5	0.8		2248	2.1	0.6
				31	0524	4.8	1.5
				Sa	1230	1.1	0.3
					1842	3.7	1.1

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0012	1.9	0.6	16	0042	2.3	0.7
Su	0630	4.8	1.5	M	0642	4.1	1.3
	1318	0.9	0.3		1312	1.5	0.5
	1930	4.1	1.3		1936	4.0	1.2
2	0118	1.5	0.5	17	0130	2.0	0.6
M	0730	4.8	1.5	Tu	0724	4.1	1.3
	1400	0.8	0.3		1342	1.4	0.4
	2012	4.6	1.4		2006	4.4	1.3
3	0212	1.2	0.4	18	0212	1.7	0.5
Tu	0818	4.8	1.5	W	0806	4.2	1.3
	1436	0.8	0.2		1412	1.2	0.4
	2054	5.0	1.5		2036	4.8	1.5
4	0306	1.0	0.3	19	0254	1.4	0.4
W	0906	4.7	1.4	Th	0848	4.2	1.3
	1506	0.8	0.2		1442	1.2	0.4
	2130	5.3	1.6		2112	5.1	1.6
5	0348	0.8	0.3	20	0336	1.2	0.4
Th	0948	4.5	1.4	F	0924	4.1	1.3
	1542	0.8	0.3		1518	1.1	0.3
	2206	5.5	1.7		2148	5.4	1.7
6	0436	0.8	0.2	21	0418	1.0	0.3
F	1030	4.2	1.3	Sa	1006	4.0	1.2
	1612	1.0	0.3		1548	1.1	0.3
	2242	5.6	1.7		2224	5.7	1.7
7	0518	0.9	0.3	22	0506	0.9	0.3
Sa	1106	3.9	1.2	Su	1048	3.9	1.2
	1648	1.1	0.3		1630	1.1	0.3
	2324	5.5	1.7		2306	5.8	1.8
8	0606	1.0	0.3	23	0554	0.9	0.3
Su	1148	3.6	1.1	M	1136	3.7	1.1
	1718	1.3	0.4		1706	1.2	0.4
	2359	5.3	1.6		2348	5.8	1.8
9	0654	1.2	0.4	24	0648	0.9	0.3
M	1236	3.3	1.0	Tu	1230	3.5	1.1
	1754	1.6	0.5		1754	1.4	0.4
10	0048	5.1	1.6	25	0042	5.7	1.7
Tu	0748	1.5	0.5	W	0742	1.0	0.3
	1324	3.1	0.9		1330	3.4	1.0
	1830	1.9	0.6		1842	1.6	0.5
11	0130	4.8	1.5	26	0136	5.5	1.7
W	0848	1.7	0.5	Th	0842	1.0	0.3
	1436	2.9	0.9		1442	3.3	1.0
	1918	2.2	0.7		1948	1.9	0.6
12	0230	4.5	1.4	27	0236	5.2	1.6
Th	1000	1.8	0.5	F	0948	1.1	0.4
	1600	2.9	0.9		1554	3.4	1.1
	2030	2.5	0.8		2106	2.1	0.6
13	0330	4.3	1.3	28	0342	5.0	1.5
F	1106	1.8	0.5	Sa	1048	1.2	0.4
	1730	3.1	0.9		1706	3.7	1.1
	2206	2.6	0.8		2230	2.1	0.6
14	0442	4.1	1.3	29	0454	4.7	1.4
Sa	1200	1.7	0.5	Su	1148	1.2	0.4
	1824	3.4	1.0		1812	4.1	1.2
	2336	2.5	0.8		2354	2.0	0.6
15	0548	4.1	1.2	30	0600	4.5	1.4
Su	1242	1.6	0.5	M	1236	1.2	0.4
	1906	3.7	1.1		1900	4.5	1.4

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0106	1.7	0.5	16	0048	2.3	0.7
Tu	0706	4.4	1.3	W	0630	3.8	1.2
	1318	1.2	0.4		1242	1.7	0.5
	1948	4.9	1.5		1924	4.5	1.4
2	0206	1.5	0.5	17	0148	2.0	0.6
W	0800	4.2	1.3	Th	0724	3.8	1.2
	1400	1.2	0.4		1324	1.6	0.5
	2030	5.2	1.6		2006	5.0	1.5
3	0300	1.3	0.4	18	0236	1.7	0.5
Th	0848	4.0	1.2	F	0818	3.8	1.2
	1436	1.2	0.4		1406	1.4	0.4
	2112	5.5	1.7		2048	5.3	1.6
4	0348	1.2	0.4	19	0324	1.4	0.4
F	0936	3.9	1.2	Sa	0906	3.8	1.2
	1512	1.2	0.4		1448	1.3	0.4
	2148	5.6	1.7		2130	5.7	1.8
5	0436	1.1	0.3	20	0412	1.1	0.3
Sa	1018	3.7	1.1	Su	0954	3.8	1.2
	1548	1.3	0.4		1530	1.2	0.4
	2230	5.7	1.7		2212	6.0	1.8
6	0518	1.1	0.3	21	0500	0.9	0.3
Su	1100	3.6	1.1	M	1042	3.9	1.2
	1624	1.4	0.4		1612	1.2	0.4
	2306	5.7	1.7		2254	6.2	1.9
7	0600	1.2	0.4	22	0548	0.7	0.2
M	1142	3.5	1.1	Tu	1130	3.9	1.2
	1700	1.5	0.5		1700	1.2	0.4
	2348	5.5	1.7		2342	6.3	1.9
8	0642	1.3	0.4	23	0636	0.7	0.2
Tu	1224	3.4	1.0	W	1224	3.9	1.2
	1736	1.7	0.5		1748	1.3	0.4
9	0024	5.3	1.6	24	0030	6.1	1.9
W	0730	1.4	0.4	Th	0724	0.7	0.2
	1312	3.3	1.0		1318	3.9	1.2
	1818	1.9	0.6		1842	1.5	0.5
10	0106	5.1	1.5	25	0118	5.9	1.8
Th	0812	1.5	0.5	F	0812	0.9	0.3
	1400	3.2	1.0		1412	3.9	1.2
	1900	2.2	0.7		1942	1.7	0.5
11	0148	4.8	1.5	26	0212	5.4	1.7
F	0900	1.7	0.5	Sa	0906	1.0	0.3
	1500	3.3	1.0		1518	4.0	1.2
	1954	2.4	0.7		2048	1.9	0.6
12	0236	4.5	1.4	27	0312	5.0	1.5
Sa	0948	1.8	0.5	Su	1000	1.2	0.4
	1606	3.4	1.0		1618	4.2	1.3
	2106	2.6	0.8		2206	2.1	0.6
13	0330	4.2	1.3	28	0418	4.5	1.4
Su	1036	1.8	0.6	M	1054	1.4	0.4
	1706	3.5	1.1		1730	4.4	1.3
	2224	2.6	0.8		2336	2.1	0.6
14	0430	4.0	1.2	29	0530	4.1	1.3
M	1124	1.8	0.6	Tu	1148	1.5	0.5
	1800	3.8	1.2		1830	4.7	1.4
	2342	2.5	0.8				
15	0530	3.9	1.2	30	0100	2.0	0.6
Tu	1206	1.8	0.5	W	0642	3.8	1.2
	1842	4.1	1.3		1242	1.6	0.5
					1930	5.0	1.5
				31	0206	1.8	0.6
				Th	0742	3.7	1.1
					1330	1.7	0.5
					2018	5.2	1.6

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

ANTOFAGASTA, CHILE, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0448	0.7	0.2	16	0500	1.2	0.4
Th	1024	3.4	1.0	F	1042	3.2	1.0
	1554	0.9	0.3		1600	1.4	0.4
	2242	5.7	1.7		2242	4.9	1.5
2	0536	0.6	0.2	17	0536	1.2	0.4
F	1118	3.4	1.1	Sa	1118	3.2	1.0
	1648	1.0	0.3		1642	1.5	0.5
	2330	5.5	1.7		2318	4.8	1.5
3	0618	0.6	0.2	18	0606	1.2	0.4
Sa	1212	3.5	1.1	Su	1154	3.3	1.0
	1742	1.1	0.4		1718	1.6	0.5
					2354	4.6	1.4
4	0018	5.3	1.6	19	0636	1.3	0.4
Su	0706	0.7	0.2	M	1230	3.3	1.0
	1306	3.6	1.1		1800	1.7	0.5
	1842	1.4	0.4				
5	0106	4.9	1.5	20	0024	4.4	1.3
M	0754	0.9	0.3	Tu	0712	1.4	0.4
	1406	3.6	1.1		1312	3.4	1.0
	1942	1.6	0.5		1842	1.9	0.6
6	0200	4.5	1.4	21	0106	4.1	1.3
Tu	0848	1.0	0.3	W	0742	1.5	0.5
	1506	3.7	1.1		1400	3.4	1.1
	2054	1.9	0.6		1942	2.0	0.6
7	0300	4.0	1.2	22	0148	3.7	1.1
W	0936	1.2	0.4	Th	0824	1.6	0.5
	1612	3.8	1.2		1454	3.6	1.1
	2212	2.0	0.6		2054	2.2	0.7
8	0400	3.6	1.1	23	0236	3.4	1.0
Th	1024	1.4	0.4	F	0906	1.6	0.5
	1718	4.0	1.2		1606	3.8	1.2
	2336	2.0	0.6		2230	2.2	0.7
9	0506	3.2	1.0	24	0348	3.1	0.9
F	1118	1.5	0.5	Sa	1000	1.7	0.5
	1818	4.1	1.3		1712	4.1	1.2
10	0054	1.9	0.6	25	0006	2.0	0.6
Sa	0618	3.1	0.9	Su	0518	2.9	0.9
	1206	1.6	0.5		1106	1.6	0.5
	1906	4.3	1.3		1818	4.5	1.4
11	0200	1.8	0.6	26	0118	1.7	0.5
Su	0718	3.0	0.9	M	0636	2.9	0.9
	1254	1.6	0.5		1212	1.5	0.5
	1948	4.5	1.4		1918	4.9	1.5
12	0248	1.6	0.5	27	0218	1.4	0.4
M	0806	3.0	0.9	Tu	0742	3.0	0.9
	1330	1.6	0.5		1312	1.3	0.4
	2030	4.7	1.4		2006	5.2	1.6
13	0324	1.5	0.5	28	0306	1.0	0.3
Tu	0848	3.0	0.9	W	0836	3.2	1.0
	1412	1.5	0.5		1406	1.1	0.3
	2106	4.8	1.5		2054	5.5	1.7
14	0400	1.4	0.4	29	0348	0.8	0.2
W	0930	3.1	0.9	Th	0930	3.4	1.1
	1448	1.5	0.5		1500	1.0	0.3
	2136	4.9	1.5		2142	5.6	1.7
15	0430	1.3	0.4	30	0430	0.6	0.2
Th	1006	3.1	1.0	F	1012	3.7	1.1
	1524	1.4	0.4		1548	0.9	0.3
	2212	4.9	1.5		2224	5.6	1.7
				31	0506	0.6	0.2
				Sa	1100	3.8	1.2
					1642	0.9	0.3
					2312	5.4	1.7

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0548	0.6	0.2	16	0524	1.1	0.4
Su	1148	4.0	1.2	M	1118	3.7	1.1
	1730	1.0	0.3		1700	1.4	0.4
	2354	5.1	1.6		2324	4.5	1.4
2	0630	0.8	0.2	17	0554	1.2	0.4
M	1230	4.0	1.2	Tu	1154	3.8	1.2
	1824	1.2	0.4		1742	1.5	0.5
					2359	4.2	1.3
3	0036	4.7	1.4	18	0618	1.3	0.4
Tu	0706	1.0	0.3	W	1230	3.9	1.2
	1318	4.0	1.2		1830	1.7	0.5
	1918	1.5	0.5				
4	0124	4.2	1.3	19	0036	3.9	1.2
W	0748	1.2	0.4	Th	0654	1.4	0.4
	1418	4.0	1.2		1318	3.9	1.2
	2018	1.8	0.6		1924	1.9	0.6
5	0212	3.7	1.1	20	0118	3.5	1.1
Th	0836	1.4	0.4	F	0730	1.6	0.5
	1518	3.9	1.2		1412	3.9	1.2
	2142	2.1	0.6		2042	2.0	0.6
6	0312	3.2	1.0	21	0212	3.1	1.0
F	0924	1.7	0.5	Sa	0818	1.7	0.5
	1630	3.9	1.2		1524	4.0	1.2
	2318	2.1	0.7		2230	2.1	0.6
7	0430	2.9	0.9	22	0336	2.8	0.9
Sa	1024	1.8	0.6	Su	0924	1.8	0.6
	1742	4.0	1.2		1648	4.2	1.3
8	0048	2.0	0.6	23	0006	1.9	0.6
Su	0600	2.8	0.9	M	0524	2.7	0.8
	1130	1.9	0.6		1042	1.8	0.6
	1842	4.2	1.3		1800	4.5	1.4
9	0154	1.8	0.6	24	0118	1.5	0.5
M	0712	2.8	0.9	Tu	0648	2.9	0.9
	1230	1.9	0.6		1206	1.6	0.5
	1930	4.4	1.3		1900	4.8	1.5
10	0230	1.6	0.5	25	0206	1.2	0.4
Tu	0800	2.9	0.9	W	0742	3.1	1.0
	1318	1.8	0.5		1306	1.4	0.4
	2006	4.5	1.4		1954	5.1	1.6
11	0306	1.5	0.5	26	0242	1.0	0.3
W	0842	3.1	0.9	Th	0830	3.5	1.1
	1400	1.6	0.5		1406	1.1	0.4
	2042	4.7	1.4		2042	5.3	1.6
12	0336	1.3	0.4	27	0324	0.8	0.2
Th	0912	3.2	1.0	F	0912	3.8	1.2
	1436	1.5	0.5		1454	1.0	0.3
	2118	4.8	1.5		2124	5.3	1.6
13	0400	1.2	0.4	28	0400	0.6	0.2
F	0942	3.3	1.0	Sa	0954	4.1	1.2
	1512	1.4	0.4		1542	0.8	0.3
	2148	4.9	1.5		2206	5.2	1.6
14	0430	1.1	0.4				
Sa	1012	3.5	1.1				
	1548	1.3	0.4				
	2218	4.8	1.5				
15	0454	1.1	0.3				
Su	1042	3.6	1.1				
	1624	1.3	0.4				
	2254	4.7	1.4				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0436	0.6	0.2	16	0412	1.1	0.3
Su	1036	4.3	1.3	M	1012	4.0	1.2
	1630	0.9	0.3		1612	1.2	0.4
	2248	5.0	1.5		2224	4.4	1.4
2	0512	0.7	0.2	17	0436	1.1	0.3
M	1118	4.4	1.3	Tu	1042	4.2	1.3
	1718	1.0	0.3		1648	1.2	0.4
	2330	4.7	1.4		2300	4.2	1.3
3	0542	0.9	0.3	18	0506	1.1	0.4
Tu	1200	4.4	1.3	W	1124	4.3	1.3
	1806	1.2	0.4		1736	1.3	0.4
					2336	3.9	1.2
4	0006	4.2	1.3	19	0536	1.3	0.4
W	0618	1.1	0.3	Th	1200	4.3	1.3
	1242	4.3	1.3		1824	1.5	0.5
	1854	1.5	0.5				
5	0048	3.8	1.2	20	0018	3.5	1.1
Th	0700	1.3	0.4	F	0612	1.4	0.4
	1330	4.2	1.3		1248	4.3	1.3
	1954	1.8	0.6		1930	1.6	0.5
6	0136	3.3	1.0	21	0106	3.2	1.0
F	0736	1.6	0.5	Sa	0654	1.6	0.5
	1430	4.0	1.2		1348	4.3	1.3
	2112	2.0	0.6		2054	1.8	0.5
7	0236	3.0	0.9	22	0218	2.9	0.9
Sa	0824	1.9	0.6	Su	0748	1.8	0.5
	1536	3.9	1.2		1506	4.3	1.3
	2254	2.1	0.6		2230	1.7	0.5
8	0406	2.7	0.8	23	0400	2.7	0.8
Su	0930	2.0	0.6	M	0906	1.9	0.6
	1654	3.9	1.2		1624	4.4	1.3
					2354	1.5	0.5
9	0024	2.0	0.6	24	0536	2.8	0.9
M	0554	2.7	0.8	Tu	1042	1.9	0.6
	1048	2.1	0.7		1742	4.5	1.4
	1806	4.0	1.2				
10	0124	1.8	0.5	25	0054	1.3	0.4
Tu	0700	2.8	0.9	W	0642	3.1	0.9
	1206	2.0	0.6		1200	1.7	0.5
	1854	4.2	1.3		1842	4.7	1.4
11	0200	1.6	0.5	26	0136	1.0	0.3
W	0742	3.0	0.9	Th	0730	3.4	1.1
	1254	1.9	0.6		1306	1.4	0.4
	1936	4.3	1.3		1936	4.8	1.5
12	0230	1.4	0.4	27	0212	0.9	0.3
Th	0818	3.2	1.0	F	0812	3.8	1.2
	1342	1.7	0.5		1400	1.2	0.4
	2012	4.5	1.4		2018	4.9	1.5
13	0254	1.3	0.4	28	0248	0.8	0.2
F	0842	3.4	1.0	Sa	0854	4.1	1.3
	1418	1.5	0.5		1448	1.0	0.3
	2042	4.6	1.4		2100	4.8	1.5
14	0318	1.2	0.4	29	0324	0.7	0.2
Sa	0912	3.6	1.1	Su	0930	4.4	1.3
	1454	1.4	0.4		1530	0.9	0.3
	2118	4.6	1.4		2142	4.6	1.4
15	0342	1.1	0.3	30	0354	0.8	0.2
Su	0942	3.8	1.2	M	1006	4.6	1.4
	1530	1.2	0.4		1618	0.9	0.3
	2148	4.6	1.4		2224	4.4	1.3
				31	0430	0.9	0.3
				Tu	1048	4.7	1.4
					1700	1.0	0.3
					2300	4.1	1.2

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

ANTOFAGASTA, CHILE, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0500	1.0	0.3	16	0430	1.1	0.3
W	1124	4.6	1.4	Th	1100	4.8	1.5
	1748	1.2	0.4		1730	1.1	0.4
	2342	3.7	1.1		2318	3.5	1.1
2	0536	1.2	0.4	17	0506	1.2	0.4
Th	1206	4.5	1.4	F	1142	4.8	1.5
	1842	1.5	0.5		1830	1.2	0.4
3	0018	3.3	1.0	18	0012	3.2	1.0
F	0606	1.5	0.5	Sa	0542	1.4	0.4
	1254	4.3	1.3		1236	4.7	1.4
	1936	1.7	0.5		1936	1.3	0.4
4	0106	3.0	0.9	19	0112	2.9	0.9
Sa	0642	1.7	0.5	Su	0636	1.6	0.5
	1342	4.1	1.3		1336	4.6	1.4
	2048	1.9	0.6		2054	1.4	0.4
5	0212	2.8	0.8	20	0236	2.8	0.9
Su	0730	2.0	0.6	M	0742	1.8	0.6
	1448	4.0	1.2		1448	4.5	1.4
	2218	1.9	0.6		2212	1.3	0.4
6	0348	2.6	0.8	21	0406	2.8	0.9
M	0836	2.2	0.7	Tu	0906	1.9	0.6
	1600	3.9	1.2		1606	4.5	1.4
	2336	1.8	0.6		2318	1.2	0.4
7	0530	2.7	0.8	22	0524	3.1	0.9
Tu	1006	2.3	0.7	W	1036	1.9	0.6
	1712	3.9	1.2		1712	4.5	1.4
8	0030	1.7	0.5	23	0012	1.1	0.3
W	0630	2.9	0.9	Th	0624	3.4	1.0
	1130	2.2	0.7		1154	1.7	0.5
	1806	4.0	1.2		1818	4.5	1.4
9	0106	1.5	0.5	24	0100	1.0	0.3
Th	0712	3.1	1.0	F	0712	3.8	1.2
	1230	2.0	0.6		1254	1.5	0.5
	1848	4.1	1.2		1906	4.4	1.3
10	0136	1.4	0.4	25	0136	0.9	0.3
F	0742	3.4	1.0	Sa	0754	4.1	1.3
	1312	1.8	0.6		1348	1.3	0.4
	1930	4.1	1.3		1954	4.3	1.3
11	0200	1.3	0.4	26	0212	0.9	0.3
Sa	0806	3.6	1.1	Su	0830	4.4	1.3
	1354	1.6	0.5		1436	1.1	0.3
	2006	4.2	1.3		2036	4.2	1.3
12	0230	1.2	0.4	27	0248	0.9	0.3
Su	0836	3.9	1.2	M	0906	4.6	1.4
	1436	1.4	0.4		1524	1.0	0.3
	2042	4.2	1.3		2118	4.0	1.2
13	0254	1.1	0.3	28	0318	1.0	0.3
M	0906	4.2	1.3	Tu	0942	4.8	1.5
	1512	1.2	0.4		1612	1.0	0.3
	2118	4.1	1.3		2200	3.7	1.1
14	0324	1.0	0.3	29	0348	1.0	0.3
Tu	0942	4.4	1.4	W	1018	4.8	1.5
	1554	1.1	0.3		1654	1.1	0.4
	2154	4.0	1.2		2236	3.5	1.1
15	0354	1.0	0.3	30	0418	1.2	0.4
W	1018	4.6	1.4	Th	1100	4.8	1.5
	1642	1.1	0.3		1742	1.3	0.4
	2236	3.8	1.2		2318	3.2	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0454	1.3	0.4	16	0442	1.1	0.4
F	1136	4.7	1.4	Sa	1130	5.2	1.6
	1830	1.4	0.4		1830	1.0	0.3
	2359	3.0	0.9				
2	0530	1.5	0.5	17	0012	3.1	0.9
Sa	1224	4.5	1.4	Su	0530	1.3	0.4
	1924	1.5	0.5		1224	5.1	1.5
					1930	1.0	0.3
3	0054	2.8	0.9	18	0118	3.0	0.9
Su	0606	1.8	0.5	M	0630	1.5	0.5
	1306	4.3	1.3		1324	4.9	1.5
	2024	1.6	0.5		2036	1.0	0.3
4	0200	2.7	0.8	19	0230	3.0	0.9
M	0654	2.0	0.6	Tu	0742	1.7	0.5
	1400	4.1	1.2		1430	4.7	1.4
	2130	1.7	0.5		2142	1.0	0.3
5	0324	2.7	0.8	20	0348	3.1	1.0
Tu	0754	2.2	0.7	W	0900	1.8	0.6
	1500	3.9	1.2		1536	4.5	1.4
	2230	1.6	0.5		2242	1.0	0.3
6	0442	2.8	0.9	21	0454	3.4	1.0
W	0918	2.3	0.7	Th	1024	1.8	0.6
	1606	3.8	1.2		1642	4.3	1.3
	2324	1.6	0.5		2330	1.0	0.3
7	0542	3.0	0.9	22	0554	3.7	1.1
Th	1042	2.3	0.7	F	1136	1.7	0.5
	1706	3.8	1.2		1742	4.1	1.2
	2359	1.5	0.5				
8	0618	3.2	1.0	23	0018	1.0	0.3
F	1148	2.1	0.6	Sa	0642	4.0	1.2
	1754	3.8	1.2		1242	1.6	0.5
					1842	3.9	1.2
9	0036	1.4	0.4	24	0054	1.0	0.3
Sa	0654	3.5	1.1	Su	0730	4.3	1.3
	1242	1.9	0.6		1342	1.4	0.4
	1842	3.8	1.2		1930	3.7	1.1
10	0106	1.3	0.4	25	0136	1.0	0.3
Su	0724	3.8	1.2	M	0806	4.5	1.4
	1330	1.7	0.5		1436	1.3	0.4
	1924	3.8	1.2		2018	3.5	1.1
11	0136	1.2	0.4	26	0206	1.1	0.3
M	0800	4.2	1.3	Tu	0848	4.7	1.4
	1412	1.4	0.4		1524	1.2	0.4
	2006	3.7	1.1		2100	3.3	1.0
12	0206	1.1	0.3	27	0242	1.1	0.3
Tu	0836	4.5	1.4	W	0924	4.8	1.5
	1500	1.2	0.4		1606	1.2	0.4
	2048	3.6	1.1		2142	3.2	1.0
13	0242	1.0	0.3	28	0312	1.2	0.4
W	0912	4.8	1.5	Th	1000	4.9	1.5
	1548	1.1	0.3		1648	1.2	0.4
	2130	3.5	1.1		2218	3.1	0.9
14	0318	1.0	0.3	29	0348	1.3	0.4
Th	0954	5.0	1.5	F	1036	4.8	1.5
	1636	1.0	0.3		1730	1.2	0.4
	2218	3.4	1.0		2306	3.0	0.9
15	0400	1.0	0.3	30	0424	1.4	0.4
F	1042	5.1	1.6	Sa	1118	4.7	1.4
	1730	1.0	0.3		1818	1.3	0.4
	2312	3.2	1.0		2348	2.9	0.9
				31	0500	1.6	0.5
				Su	1200	4.6	1.4
					1906	1.3	0.4

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0042	2.8	0.9	16	0106	3.2	1.0
M	0542	1.7	0.5	Tu	0624	1.3	0.4
	1236	4.4	1.3		1306	5.0	1.5
	1954	1.4	0.4		2006	0.8	0.2
2	0136	2.8	0.8	17	0206	3.3	1.0
Tu	0630	1.9	0.6	W	0730	1.5	0.5
	1324	4.2	1.3		1406	4.7	1.4
	2042	1.4	0.4		2100	0.8	0.3
3	0236	2.8	0.9	18	0312	3.4	1.1
W	0724	2.1	0.6	Th	0842	1.7	0.5
	1412	4.0	1.2		1506	4.3	1.3
	2124	1.5	0.5		2154	1.0	0.3
4	0336	2.9	0.9	19	0418	3.6	1.1
Th	0830	2.2	0.7	F	1000	1.8	0.5
	1500	3.8	1.2		1606	3.9	1.2
	2212	1.5	0.5		2242	1.0	0.3
5	0436	3.1	0.9	20	0518	3.9	1.2
F	0942	2.2	0.7	Sa	1124	1.8	0.5
	1554	3.6	1.1		1712	3.6	1.1
	2254	1.5	0.5		2330	1.1	0.3
6	0518	3.3	1.0	21	0612	4.1	1.3
Sa	1100	2.2	0.7	Su	1236	1.7	0.5
	1654	3.5	1.1		1812	3.3	1.0
	2330	1.4	0.4				
7	0606	3.6	1.1	22	0018	1.2	0.4
Su	1206	2.0	0.6	M	0706	4.3	1.3
	1748	3.4	1.0		1336	1.6	0.5
					1906	3.1	1.0
8	0006	1.4	0.4	23	0054	1.2	0.4
M	0648	3.9	1.2	Tu	0748	4.5	1.4
	1306	1.8	0.5		1436	1.4	0.4
	1842	3.3	1.0		2000	3.0	0.9
9	0042	1.3	0.4	24	0136	1.3	0.4
Tu	0730	4.3	1.3	W	0830	4.7	1.4
	1400	1.5	0.5		1518	1.3	0.4
	1936	3.3	1.0		2042	3.0	0.9
10	0124	1.1	0.4	25	0212	1.3	0.4
W	0812	4.7	1.4	Th	0906	4.8	1.5
	1454	1.3	0.4		1600	1.3	0.4
	2024	3.2	1.0		2130	2.9	0.9
11	0206	1.0	0.3	26	0254	1.3	0.4
Th	0854	5.0	1.5	F	0942	4.8	1.5
	1542	1.0	0.3		1642	1.2	0.4
	2118	3.2	1.0		2212	2.9	0.9
12	0254	1.0	0.3	27	0330	1.3	0.4
F	0942	5.2	1.6	Sa	1018	4.8	1.5
	1636	0.9	0.3		1718	1.2	0.4
	2212	3.1	1.0		2248	2.9	0.9
13	0342	1.0	0.3	28	0406	1.4	0.4
Sa	1030	5.4	1.6	Su	1054	4.7	1.4
	1724	0.8	0.2		1754	1.2	0.4
	2306	3.1	1.0		2330	2.9	0.9
14	0430	1.0	0.3	29	0448	1.5	0.5
Su	1118	5.4	1.6	M	1136	4.6	1.4
	1818	0.7	0.2		1830	1.2	0.4
15	0006	3.1	1.0	30	0012	2.9	0.9
M	0524	1.1	0.4	Tu	0524	1.6	0.5
	1212	5.2	1.6		1212	4.5	1.4
	1912	0.7	0.2		1906	1.2	0.4

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

ANTOFAGASTA, CHILE, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0100	3.0	0.9	16	0136	3.6	1.1
W	0606	1.7	0.5	Th	0718	1.3	0.4
	1248	4.3	1.3		1336	4.5	1.4
	1948	1.3	0.4		2012	0.8	0.3
2	0142	3.0	0.9	17	0230	3.7	1.1
Th	0654	1.9	0.6	F	0824	1.5	0.5
	1324	4.0	1.2		1430	4.0	1.2
	2024	1.4	0.4		2106	1.0	0.3
3	0236	3.1	0.9	18	0336	3.8	1.2
F	0748	2.0	0.6	Sa	0942	1.7	0.5
	1406	3.7	1.1		1530	3.5	1.1
	2100	1.4	0.4		2154	1.2	0.4
4	0324	3.2	1.0	19	0442	3.9	1.2
Sa	0854	2.1	0.7	Su	1106	1.8	0.6
	1500	3.5	1.1		1636	3.1	1.0
	2142	1.5	0.5		2248	1.3	0.4
5	0424	3.4	1.0	20	0542	4.1	1.2
Su	1018	2.1	0.7	M	1230	1.7	0.5
	1554	3.2	1.0		1748	2.9	0.9
	2224	1.5	0.5		2342	1.4	0.4
6	0518	3.7	1.1	21	0642	4.2	1.3
M	1142	2.0	0.6	Tu	1336	1.6	0.5
	1700	3.1	0.9		1854	2.8	0.9
	2312	1.4	0.4				
7	0612	4.0	1.2	22	0030	1.4	0.4
Tu	1254	1.8	0.6	W	0730	4.4	1.3
	1812	2.9	0.9		1430	1.4	0.4
	2359	1.3	0.4		1954	2.8	0.8
8	0706	4.4	1.4	23	0118	1.4	0.4
W	1354	1.5	0.5	Th	0812	4.5	1.4
	1918	2.9	0.9		1512	1.3	0.4
					2036	2.8	0.9
9	0054	1.2	0.4	24	0200	1.4	0.4
Th	0754	4.8	1.5	F	0854	4.6	1.4
	1448	1.2	0.4		1548	1.2	0.4
	2018	3.0	0.9		2118	2.9	0.9
10	0148	1.0	0.3	25	0236	1.3	0.4
F	0842	5.1	1.6	Sa	0924	4.7	1.4
	1536	0.9	0.3		1618	1.1	0.3
	2112	3.1	0.9		2154	3.0	0.9
11	0236	1.0	0.3	26	0318	1.3	0.4
Sa	0930	5.4	1.6	Su	1000	4.7	1.4
	1624	0.7	0.2		1648	1.0	0.3
	2200	3.2	1.0		2230	3.1	0.9
12	0330	0.9	0.3	27	0354	1.3	0.4
Su	1018	5.5	1.7	M	1030	4.7	1.4
	1712	0.5	0.2		1718	1.0	0.3
	2254	3.3	1.0		2300	3.1	1.0
13	0424	0.9	0.3	28	0430	1.3	0.4
M	1106	5.4	1.7	Tu	1106	4.6	1.4
	1754	0.5	0.2		1748	1.0	0.3
	2348	3.4	1.1		2336	3.2	1.0
14	0518	0.9	0.3	29	0506	1.4	0.4
Tu	1154	5.2	1.6	W	1136	4.4	1.3
	1842	0.5	0.2		1818	1.1	0.3
15	0036	3.6	1.1	30	0012	3.2	1.0
W	0612	1.1	0.3	Th	0548	1.5	0.5
	1242	4.9	1.5		1212	4.2	1.3
	1930	0.7	0.2		1854	1.2	0.4
				31	0054	3.3	1.0
				F	0630	1.7	0.5
					1248	3.9	1.2
					1924	1.3	0.4

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0136	3.3	1.0	16	0254	3.9	1.2
Sa	0718	1.8	0.6	Su	0918	1.7	0.5
	1324	3.5	1.1		1454	3.1	1.0
	1954	1.4	0.4		2100	1.4	0.4
2	0230	3.4	1.0	17	0400	3.9	1.2
Su	0824	2.0	0.6	M	1048	1.8	0.6
	1412	3.2	1.0		1612	2.8	0.9
	2036	1.5	0.5		2200	1.6	0.5
3	0330	3.5	1.1	18	0512	3.9	1.2
M	0954	2.1	0.6	Tu	1218	1.7	0.5
	1512	2.9	0.9		1742	2.6	0.8
	2124	1.6	0.5		2306	1.7	0.5
4	0442	3.8	1.2	19	0618	4.1	1.2
Tu	1130	1.9	0.6	W	1330	1.5	0.5
	1636	2.7	0.8		1854	2.7	0.8
	2230	1.5	0.5				
5	0548	4.1	1.3	20	0012	1.6	0.5
W	1254	1.7	0.5	Th	0712	4.2	1.3
	1806	2.7	0.8		1412	1.4	0.4
	2336	1.4	0.4		1948	2.8	0.8
6	0648	4.5	1.4	21	0100	1.6	0.5
Th	1348	1.3	0.4	F	0754	4.3	1.3
	1912	2.8	0.8		1448	1.2	0.4
					2024	2.9	0.9
7	0042	1.2	0.4	22	0148	1.4	0.4
F	0742	4.8	1.5	Sa	0830	4.4	1.4
	1436	1.0	0.3		1518	1.1	0.3
	2012	3.0	0.9		2100	3.1	0.9
8	0136	1.0	0.3	23	0224	1.3	0.4
Sa	0830	5.1	1.6	Su	0900	4.5	1.4
	1518	0.7	0.2		1542	1.0	0.3
	2100	3.2	1.0		2130	3.2	1.0
9	0230	0.9	0.3	24	0300	1.2	0.4
Su	0912	5.3	1.6	M	0930	4.5	1.4
	1600	0.5	0.2		1606	1.0	0.3
	2148	3.5	1.1		2200	3.3	1.0
10	0324	0.7	0.2	25	0336	1.1	0.4
M	1000	5.3	1.6	Tu	1006	4.5	1.4
	1642	0.4	0.1		1636	1.0	0.3
	2230	3.7	1.1		2230	3.5	1.1
11	0418	0.7	0.2	26	0412	1.1	0.4
Tu	1048	5.2	1.6	W	1036	4.4	1.3
	1718	0.4	0.1		1700	1.0	0.3
	2318	3.9	1.2		2300	3.6	1.1
12	0506	0.7	0.2	27	0448	1.2	0.4
W	1130	4.9	1.5	Th	1106	4.2	1.3
	1800	0.5	0.2		1730	1.0	0.3
					2330	3.6	1.1
13	0006	4.0	1.2	28	0530	1.3	0.4
Th	0600	0.9	0.3	F	1142	3.9	1.2
	1218	4.5	1.4		1800	1.2	0.4
	1842	0.7	0.2				
14	0054	4.0	1.2	29	0012	3.7	1.1
F	0654	1.2	0.4	Sa	0612	1.4	0.4
	1306	4.1	1.2		1212	3.6	1.1
	1924	0.9	0.3		1830	1.3	0.4
15	0154	4.0	1.2	30	0054	3.7	1.1
Sa	0800	1.4	0.4	Su	0706	1.6	0.5
	1354	3.6	1.1		1254	3.2	1.0
	2012	1.1	0.4		1900	1.4	0.4
				31	0142	3.7	1.1
				M	0818	1.8	0.6
					1342	2.9	0.9
					1942	1.6	0.5

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0248	3.8	1.2	16	0436	3.8	1.2
Tu	0954	1.9	0.6	W	1200	1.6	0.5
	1500	2.6	0.8		1742	2.6	0.8
	2042	1.7	0.5		2236	1.9	0.6
2	0412	3.9	1.2	17	0542	3.9	1.2
W	1130	1.7	0.5	Th	1254	1.5	0.5
	1648	2.5	0.8		1842	2.7	0.8
	2206	1.7	0.5		2354	1.8	0.6
3	0524	4.2	1.3	18	0636	4.0	1.2
Th	1248	1.4	0.4	F	1336	1.3	0.4
	1818	2.6	0.8		1930	2.9	0.9
	2330	1.5	0.5				
4	0630	4.5	1.4	19	0042	1.7	0.5
F	1336	1.1	0.3	Sa	0718	4.1	1.3
	1912	2.9	0.9		1406	1.2	0.4
					2000	3.1	0.9
5	0036	1.3	0.4	20	0130	1.5	0.5
Sa	0724	4.8	1.5	Su	0754	4.2	1.3
	1412	0.8	0.3		1436	1.1	0.3
	2000	3.2	1.0		2030	3.3	1.0
6	0136	1.0	0.3	21	0206	1.3	0.4
Su	0812	5.0	1.5	M	0830	4.3	1.3
	1454	0.6	0.2		1500	1.0	0.3
	2042	3.6	1.1		2054	3.5	1.1
7	0230	0.8	0.2	22	0242	1.2	0.4
M	0854	5.0	1.5	Tu	0900	4.3	1.3
	1530	0.5	0.1		1524	1.0	0.3
	2124	3.9	1.2		2124	3.7	1.1
8	0318	0.6	0.2	23	0318	1.1	0.3
Tu	0942	5.0	1.5	W	0930	4.2	1.3
	1606	0.4	0.1		1548	1.0	0.3
	2206	4.1	1.3		2154	3.9	1.2
9	0406	0.6	0.2	24	0354	1.0	0.3
W	1024	4.8	1.5	Th	1000	4.1	1.3
	1642	0.5	0.1		1612	1.0	0.3
	2248	4.3	1.3		2224	4.0	1.2
10	0454	0.7	0.2	25	0430	1.0	0.3
Th	1106	4.5	1.4	F	1036	3.9	1.2
	1718	0.6	0.2		1642	1.0	0.3
	2336	4.3	1.3		2300	4.1	1.3
11	0542	0.9	0.3	26	0518	1.1	0.4
F	1148	4.0	1.2	Sa	1112	3.6	1.1
	1754	0.8	0.3		1712	1.1	0.4
					2336	4.1	1.3
12	0018	4.3	1.3	27	0606	1.3	0.4
Sa	0636	1.1	0.3	Su	1148	3.3	1.0
	1236	3.6	1.1		1742	1.3	0.4
	1836	1.1	0.3				
13	0112	4.2	1.3	28	0024	4.1	1.3
Su	0742	1.4	0.4	M	0706	1.5	0.5
	1324	3.1	1.0		1236	2.9	0.9
	1918	1.3	0.4		1818	1.4	0.4
14	0206	4.0	1.2	29	0118	4.1	1.3
M	0900	1.6	0.5	Tu	0818	1.6	0.5
	1430	2.8	0.8		1342	2.6	0.8
	2006	1.6	0.5		1912	1.6	0.5
15	0318	3.9	1.2	30	0224	4.1	1.2
Tu	1030	1.7	0.5	W	0954	1.6	0.5
	1600	2.6	0.8		1524	2.5	0.8
	2118	1.8	0.6		2024	1.8	0.5

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0348	4.1	1.3	16	0454	3.8	1.2
Th	1118	1.4	0.4	F	1206	1.4	0.4
	1706	2.6	0.8		1818	2.8	0.9
	2200	1.8	0.6		2318	2.0	0.6
2	0506	4.2	1.3	17	0548	3.8	1.2
F	1218	1.2	0.4	Sa	1248	1.3	0.4
	1812	2.9	0.9		1854	3.1	0.9
	2324	1.6	0.5				
3	0606	4.4	1.3	18	0018	1.9	0.6
Sa	1306	1.0	0.3	Su	0636	3.9	1.2
	1906	3.2	1.0		1318	1.2	0.4
					1924	3.3	1.0
4	0036	1.3	0.4	19	0100	1.7	0.5
Su	0700	4.6	1.4	M	0712	3.9	1.2
	1342	0.8	0.2		1342	1.1	0.4
	1948	3.6	1.1		1954	3.6	1.1
5	0130	1.0	0.3	20	0142	1.5	0.5
M	0748	4.6	1.4	Tu	0748	3.9	1.2
	1418	0.6	0.2		1406	1.1	0.3
	2024	4.0	1.2		2018	3.8	1.2
6	0218	0.8	0.3	21	0218	1.3	0.4
Tu	0836	4.6	1.4	W	0824	3.9	1.2
	1454	0.5	0.2		1436	1.0	0.3
	2106	4.3	1.3		2048	4.1	1.2
7	0306	0.7	0.2	22	0300	1.1	0.4
W	0918	4.4	1.4	Th	0900	3.9	1.2
	1530	0.6	0.2		1500	1.0	0.3
	2142	4.5	1.4		2124	4.3	1.3
8	0354	0.7	0.2	23	0342	1.1	0.3
Th	1000	4.2	1.3	F	0936	3.7	1.1
	1600	0.6	0.2		1530	1.0	0.3
	2224	4.7	1.4		2154	4.5	1.4
9	0442	0.8	0.2	24	0424	1.0	0.3
F	1042	3.9	1.2	Sa	1012	3.5	1.1
	1636	0.8	0.2		1600	1.0	0.3
	2306	4.7	1.4		2236	4.6	1.4
10	0530	0.9	0.3	25	0512	1.1	0.3
Sa	1124	3.5	1.1	Su	1054	3.3	1.0
	1712	1.0	0.3		1636	1.1	0.4
	2348	4.6	1.4		2318	4.6	1.4
11	0624	1.1	0.4	26	0606	1.2	0.4
Su	1206	3.2	1.0	M	1142	3.0	0.9
	1748	1.2	0.4		1712	1.3	0.4
12	0036	4.4	1.3	27	0006	4.6	1.4
M	0724	1.4	0.4	Tu	0706	1.2	0.4
	1300	2.9	0.9		1242	2.8	0.8
	1830	1.5	0.5		1800	1.5	0.5
13	0130	4.1	1.3	28	0100	4.5	1.4
Tu	0836	1.6	0.5	W	0818	1.3	0.4
	1406	2.6	0.8		1400	2.6	0.8
	1918	1.8	0.6		1900	1.7	0.5
14	0230	3.9	1.2	29	0212	4.4	1.3
W	1000	1.6	0.5	Th	0936	1.3	0.4
	1548	2.5	0.8		1530	2.6	0.8
	2030	2.0	0.6		2024	1.8	0.6
15	0342	3.8	1.2	30	0324	4.3	1.3
Th	1118	1.5	0.5	F	1048	1.1	0.4
	1718	2.6	0.8		1654	2.9	0.9
	2200	2.1	0.6		2154	1.8	0.6
				31	0436	4.3	1.3
				Sa	1142	1.0	0.3
					1754	3.2	1.0
					2318	1.7	0.5

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0542	4.3	1.3	16	0536	3.6	1.1
Su	1230	0.9	0.3	M	1218	1.4	0.4
	1842	3.6	1.1		1842	3.5	1.1
2	0024	1.4	0.4	17	0030	1.9	0.6
M	0636	4.2	1.3	Tu	0624	3.6	1.1
	1306	0.8	0.3		1248	1.3	0.4
	1924	4.0	1.2		1912	3.8	1.2
3	0124	1.2	0.4	18	0118	1.7	0.5
Tu	0730	4.2	1.3	W	0706	3.6	1.1
	1342	0.8	0.2		1318	1.2	0.4
	2006	4.4	1.3		1948	4.1	1.2
4	0218	1.0	0.3	19	0200	1.5	0.5
W	0812	4.0	1.2	Th	0748	3.5	1.1
	1418	0.8	0.2		1348	1.1	0.4
	2042	4.7	1.4		2018	4.4	1.3
5	0306	0.9	0.3	20	0248	1.3	0.4
Th	0854	3.8	1.2	F	0830	3.5	1.1
	1454	0.8	0.2		1418	1.1	0.3
	2124	4.8	1.5		2054	4.7	1.4
6	0348	0.9	0.3	21	0330	1.1	0.4
F	0936	3.6	1.1	Sa	0912	3.4	1.0
	1524	0.9	0.3		1454	1.0	0.3
	2200	4.9	1.5		2136	4.9	1.5
7	0436	1.0	0.3	22	0418	1.0	0.3
Sa	1018	3.4	1.0	Su	0954	3.2	1.0
	1600	1.0	0.3		1530	1.1	0.3
	2242	4.9	1.5		2218	5.1	1.5
8	0524	1.0	0.3	23	0512	1.0	0.3
Su	1100	3.1	1.0	M	1048	3.1	1.0
	1636	1.2	0.4		1612	1.1	0.4
	2324	4.8	1.5		2306	5.1	1.6
9	0612	1.2	0.4	24	0600	1.0	0.3
M	1148	2.9	0.9	Tu	1142	3.0	0.9
	1712	1.4	0.4		1700	1.2	0.4
					2354	5.1	1.5
10	0006	4.6	1.4	25	0700	1.0	0.3
Tu	0706	1.3	0.4	W	1242	2.9	0.9
	1242	2.8	0.8		1754	1.4	0.4
	1754	1.6	0.5				
11	0054	4.3	1.3	26	0048	4.9	1.5
W	0806	1.4	0.4	Th	0800	1.0	0.3
	1348	2.6	0.8		1354	2.9	0.9
	1842	1.9	0.6		1900	1.6	0.5
12	0148	4.1	1.3	27	0154	4.7	1.4
Th	0912	1.5	0.5	F	0906	1.0	0.3
	1506	2.6	0.8		1506	3.0	0.9
	1942	2.1	0.6		2018	1.8	0.6
13	0242	3.9	1.2	28	0300	4.5	1.4
F	1012	1.5	0.5	Sa	1000	1.0	0.3
	1624	2.8	0.8		1618	3.3	1.0
	2106	2.2	0.7		2142	1.8	0.6
14	0348	3.8	1.2	29	0406	4.2	1.3
Sa	1100	1.5	0.5	Su	1100	1.0	0.3
	1724	3.0	0.9		1724	3.6	1.1
	2224	2.2	0.7		2306	1.8	0.5
15	0442	3.7	1.1	30	0512	4.0	1.2
Su	1142	1.4	0.4	M	1148	1.0	0.3
	1806	3.2	1.0		1818	4.0	1.2
	2336	2.1	0.6				

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0018	1.6	0.5	16	0530	3.3	1.0
Tu	0612	3.8	1.2	W	1148	1.5	0.5
	1230	1.0	0.3		1836	3.9	1.2
	1900	4.3	1.3				
2	0118	1.4	0.4	17	0054	2.0	0.6
W	0706	3.7	1.1	Th	0624	3.2	1.0
	1312	1.0	0.3		1224	1.4	0.4
	1948	4.6	1.4		1918	4.2	1.3
3	0212	1.3	0.4	18	0148	1.7	0.5
Th	0754	3.5	1.1	F	0718	3.2	1.0
	1348	1.0	0.3		1306	1.3	0.4
	2030	4.8	1.5		1954	4.6	1.4
4	0306	1.2	0.4	19	0242	1.4	0.4
F	0842	3.3	1.0	Sa	0806	3.2	1.0
	1424	1.1	0.3		1348	1.2	0.4
	2106	5.0	1.5		2036	5.0	1.5
5	0354	1.1	0.3	20	0330	1.2	0.4
Sa	0924	3.2	1.0	Su	0900	3.1	1.0
	1500	1.1	0.3		1430	1.1	0.3
	2148	5.0	1.5		2124	5.2	1.6
6	0436	1.1	0.3	21	0412	1.0	0.3
Su	1006	3.1	1.0	M	0948	3.2	1.0
	1536	1.2	0.4		1518	1.1	0.3
	2224	5.0	1.5		2206	5.4	1.7
7	0518	1.1	0.4	22	0500	0.9	0.3
M	1048	3.0	0.9	Tu	1042	3.2	1.0
	1612	1.3	0.4		1606	1.1	0.3
	2306	4.9	1.5		2254	5.4	1.7
8	0600	1.2	0.4	23	0548	0.8	0.2
Tu	1136	3.0	0.9	W	1130	3.2	1.0
	1648	1.5	0.5		1654	1.1	0.4
	2342	4.8	1.5		2342	5.4	1.6
9	0642	1.3	0.4	24	0642	0.8	0.2
W	1224	2.9	0.9	Th	1230	3.3	1.0
	1730	1.7	0.5		1754	1.3	0.4
10	0024	4.6	1.4	25	0036	5.2	1.6
Th	0730	1.3	0.4	F	0730	0.8	0.3
	1312	2.9	0.9		1330	3.4	1.0
	1818	1.9	0.6		1854	1.5	0.5
11	0106	4.3	1.3	26	0130	4.8	1.5
F	0818	1.4	0.4	Sa	0824	0.9	0.3
	1412	2.9	0.9		1430	3.5	1.1
	1906	2.1	0.6		2006	1.7	0.5
12	0148	4.1	1.2	27	0224	4.5	1.4
Sa	0900	1.5	0.5	Su	0912	1.0	0.3
	1512	3.0	0.9		1536	3.7	1.1
	2006	2.2	0.7		2124	1.8	0.6
13	0236	3.8	1.2	28	0330	4.0	1.2
Su	0948	1.5	0.5	M	1006	1.1	0.4
	1612	3.1	0.9		1642	3.9	1.2
	2124	2.3	0.7		2248	1.9	0.6
14	0330	3.6	1.1	29	0436	3.7	1.1
M	1030	1.6	0.5	Tu	1100	1.2	0.4
	1706	3.3	1.0		1748	4.2	1.3
	2242	2.3	0.7				
15	0430	3.4	1.1	30	0006	1.8	0.6
Tu	1112	1.6	0.5	W	0548	3.4	1.0
	1754	3.6	1.1		1154	1.3	0.4
	2354	2.2	0.7		1842	4.4	1.4
				31	0118	1.6	0.5
				Th	0648	3.2	1.0
					1236	1.3	0.4
					1930	4.7	1.4

Time meridian 60° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0323	-0.2	-0.1	16	0352	0.1	0.0
Th	0845	1.6	0.5	F	0917	1.6	0.5
	1413	-0.3	-0.1		1433	0.2	0.1
	2112	4.0	1.2		2127	3.4	1.0
2	0412	-0.3	-0.1	17	0424	0.1	0.0
F	0941	1.7	0.5	Sa	0953	1.6	0.5
	1507	-0.2	-0.1		1509	0.3	0.1
	2200	3.9	1.2		2159	3.3	1.0
3	0501	-0.3	-0.1	18	0453	0.1	0.0
Sa	1037	1.8	0.5	Su	1032	1.7	0.5
	1559	0.0	0.0		1547	0.4	0.1
	2250	3.7	1.1		2230	3.1	0.9
4	0547	-0.3	-0.1	19	0525	0.1	0.0
Su	1135	1.9	0.6	M	1109	1.7	0.5
	1658	0.2	0.1		1626	0.5	0.2
	2338	3.4	1.0		2258	2.9	0.9
5	0636	-0.2	-0.1	20	0554	0.2	0.1
M	1238	2.0	0.6	Tu	1151	1.8	0.5
	1802	0.5	0.2		1709	0.7	0.2
					2330	2.6	0.8
6	0030	3.0	0.9	21	0623	0.2	0.1
Tu	0722	-0.1	0.0	W	1238	1.9	0.6
	1341	2.1	0.6		1801	0.9	0.3
	1913	0.7	0.2				
7	0120	2.5	0.8	22	0004	2.3	0.7
W	0808	0.0	0.0	Th	0652	0.3	0.1
	1450	2.3	0.7		1329	2.1	0.6
	2040	0.9	0.3		1910	1.0	0.3
8	0218	2.1	0.6	23	0048	2.0	0.6
Th	0854	0.1	0.0	F	0728	0.3	0.1
	1555	2.5	0.8		1435	2.3	0.7
	2217	0.9	0.3		2048	1.1	0.3
9	0321	1.7	0.5	24	0140	1.7	0.5
F	0942	0.2	0.1	Sa	0814	0.3	0.1
	1656	2.7	0.8		1541	2.6	0.8
	2340	0.8	0.2		2230	1.0	0.3
10	0432	1.5	0.5	25	0300	1.5	0.5
Sa	1028	0.3	0.1	Su	0911	0.2	0.1
	1746	2.9	0.9		1644	2.9	0.9
					2354	0.7	0.2
11	0050	0.7	0.2	26	0433	1.4	0.4
Su	0536	1.4	0.4	M	1017	0.2	0.1
	1113	0.3	0.1		1741	3.2	1.0
	1832	3.0	0.9				
12	0138	0.5	0.2	27	0049	0.4	0.1
M	0632	1.4	0.4	Tu	0549	1.4	0.4
	1157	0.3	0.1		1120	0.0	0.0
	1911	3.2	1.0		1834	3.6	1.1
13	0214	0.4	0.1	28	0138	0.1	0.0
Tu	0719	1.4	0.4	W	0651	1.5	0.5
	1238	0.2	0.1		1218	-0.1	0.0
	1946	3.3	1.0		1925	3.8	1.2
14	0249	0.3	0.1	29	0220	-0.1	0.0
W	0800	1.5	0.5	Th	0745	1.7	0.5
	1319	0.2	0.1		1317	-0.2	-0.1
	2022	3.4	1.0		2011	3.9	1.2
15	0320	0.2	0.1	30	0304	-0.3	-0.1
Th	0836	1.5	0.5	F	0836	1.9	0.6
	1356	0.2	0.1		1407	-0.3	-0.1
	2054	3.4	1.0		2057	3.9	1.2
				31	0344	-0.4	-0.1
				Sa	0925	2.1	0.6
					1459	-0.3	-0.1
					2141	3.8	1.2

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0426	-0.4	-0.1	16	0403	0.0	0.0
Su	1015	2.2	0.7	M	0954	2.1	0.6
	1551	-0.1	0.0		1532	0.2	0.1
	2223	3.5	1.1		2155	3.0	0.9
2	0505	-0.3	-0.1	17	0429	0.0	0.0
M	1104	2.3	0.7	Tu	1028	2.2	0.7
	1647	0.1	0.0		1612	0.4	0.1
	2309	3.1	0.9		2226	2.7	0.8
3	0543	-0.2	-0.1	18	0455	0.1	0.0
Tu	1156	2.4	0.7	W	1108	2.3	0.7
	1745	0.4	0.1		1658	0.6	0.2
	2351	2.6	0.8		2255	2.4	0.7
4	0624	0.0	0.0	19	0522	0.2	0.1
W	1255	2.4	0.7	Th	1151	2.3	0.7
	1852	0.7	0.2		1753	0.8	0.2
					2330	2.0	0.6
5	0037	2.2	0.7	20	0551	0.3	0.1
Th	0705	0.2	0.1	F	1244	2.4	0.7
	1400	2.4	0.7		1903	0.9	0.3
	2019	0.9	0.3				
6	0132	1.7	0.5	21	0012	1.7	0.5
F	0751	0.3	0.1	Sa	0630	0.3	0.1
	1512	2.5	0.8		1353	2.5	0.8
	2206	0.9	0.3		2049	1.0	0.3
7	0248	1.4	0.4	22	0121	1.4	0.4
Sa	0847	0.5	0.2	Su	0727	0.4	0.1
	1622	2.6	0.8		1509	2.7	0.8
	2345	0.8	0.2		2239	0.8	0.2
8	0422	1.3	0.4	23	0311	1.2	0.4
Su	0952	0.5	0.2	M	0842	0.4	0.1
	1721	2.8	0.9		1625	2.9	0.9
					2347	0.5	0.2
9	0044	0.6	0.2	24	0448	1.3	0.4
M	0539	1.3	0.4	Tu	1008	0.3	0.1
	1054	0.5	0.2		1728	3.2	1.0
	1811	2.9	0.9				
10	0122	0.5	0.2	25	0037	0.3	0.1
Tu	0630	1.4	0.4	W	0555	1.5	0.5
	1143	0.4	0.1		1118	0.2	0.1
	1850	3.1	0.9		1821	3.5	1.1
11	0151	0.4	0.1	26	0119	0.0	0.0
W	0709	1.5	0.5	Th	0650	1.8	0.5
	1229	0.3	0.1		1220	0.0	0.0
	1925	3.2	1.0		1909	3.6	1.1
12	0217	0.2	0.1	27	0154	-0.2	-0.1
Th	0741	1.6	0.5	F	0735	2.0	0.6
	1307	0.2	0.1		1312	-0.2	-0.1
	1957	3.3	1.0		1951	3.7	1.1
13	0245	0.1	0.0	28	0233	-0.3	-0.1
F	0814	1.8	0.5	Sa	0818	2.3	0.7
	1344	0.1	0.0		1404	-0.3	-0.1
	2027	3.3	1.0		2034	3.6	1.1
14	0310	0.1	0.0				
Sa	0849	1.9	0.6				
	1421	0.1	0.0				
	2057	3.3	1.0				
15	0339	0.0	0.0				
Su	0921	2.0	0.6				
	1455	0.1	0.0				
	2129	3.2	1.0				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0307	-0.4	-0.1	16	0243	-0.1	0.0
Su	0903	2.5	0.8	M	0847	2.5	0.8
	1453	-0.2	-0.1		1442	0.1	0.0
	2114	3.4	1.0		2053	2.8	0.9
2	0344	-0.3	-0.1	17	0310	-0.1	0.0
M	0945	2.7	0.8	Tu	0919	2.6	0.8
	1543	-0.1	0.0		1521	0.2	0.1
	2155	3.0	0.9		2125	2.6	0.8
3	0417	-0.2	-0.1	18	0336	0.0	0.0
Tu	1031	2.7	0.8	W	0955	2.7	0.8
	1634	0.1	0.0		1605	0.3	0.1
	2237	2.6	0.8		2157	2.3	0.7
4	0453	-0.1	0.0	19	0403	0.1	0.0
W	1117	2.7	0.8	Th	1034	2.8	0.9
	1730	0.4	0.1		1658	0.4	0.1
	2317	2.2	0.7		2233	2.0	0.6
5	0527	0.1	0.0	20	0432	0.2	0.1
Th	1209	2.6	0.8	F	1122	2.8	0.9
	1836	0.7	0.2		1759	0.6	0.2
					2314	1.7	0.5
6	0004	1.8	0.5	21	0506	0.3	0.1
F	0606	0.4	0.1	Sa	1215	2.8	0.9
	1311	2.5	0.8		1921	0.7	0.2
	2004	0.8	0.2				
7	0103	1.4	0.4	22	0017	1.4	0.4
Sa	0648	0.6	0.2	Su	0555	0.4	0.1
	1423	2.5	0.8		1329	2.8	0.9
	2156	0.9	0.3		2102	0.7	0.2
8	0237	1.2	0.4	23	0153	1.2	0.4
Su	0754	0.7	0.2	M	0708	0.6	0.2
	1542	2.5	0.8		1449	2.8	0.9
	2323	0.7	0.2		2227	0.5	0.2
9	0427	1.2	0.4	24	0342	1.2	0.4
M	0916	0.8	0.2	Tu	0841	0.6	0.2
	1646	2.6	0.8		1604	3.0	0.9
					2326	0.3	0.1
10	0009	0.6	0.2	25	0458	1.5	0.5
Tu	0533	1.3	0.4	W	1008	0.5	0.2
	1030	0.7	0.2		1707	3.1	0.9
	1736	2.8	0.9				
11	0043	0.4	0.1	26	0005	0.1	0.0
W	0615	1.5	0.5	Th	0553	1.8	0.5
	1124	0.5	0.2		1118	0.3	0.1
	1817	2.9	0.9		1758	3.2	1.0
12	0106	0.3	0.1	27	0045	-0.1	0.0
Th	0643	1.7	0.5	F	0637	2.1	0.6
	1208	0.4	0.1		1218	0.1	0.0
	1849	3.0	0.9		1844	3.3	1.0
13	0133	0.2	0.1	28	0119	-0.2	-0.1
F	0713	1.9	0.6	Sa	0720	2.4	0.7
	1248	0.3	0.1		1307	0.0	0.0
	1921	3.1	0.9		1927	3.2	1.0
14	0156	0.1	0.0	29	0152	-0.3	-0.1
Sa	0743	2.1	0.6	Su	0759	2.7	0.8
	1325	0.2	0.1		1357	-0.1	0.0
	1951	3.1	0.9		2009	3.0	0.9
15	0220	0.0	0.0	30	0225	-0.3	-0.1
Su	0815	2.3	0.7	M	0841	2.9	0.9
	1402	0.1	0.0		1446	-0.1	0.0
	2021	3.0	0.9		2048	2.8	0.9
				31	0257	-0.2	-0.1
				Tu	0920	3.0	0.9
					1536	0.0	0.0
					2129	2.4	0.7

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0331	-0.1	0.0	16	0248	-0.1	0.0
W	1002	3.0	0.9	Th	0930	3.2	1.0
	1626	0.2	0.1		1607	0.2	0.1
	2208	2.1	0.6		2138	1.9	0.6
2	0403	0.1	0.0	17	0323	0.0	0.0
Th	1044	3.0	0.9	F	1015	3.2	1.0
	1724	0.4	0.1		1705	0.3	0.1
	2253	1.7	0.5		2227	1.6	0.5
3	0434	0.3	0.1	18	0359	0.2	0.1
F	1132	2.8	0.9	Sa	1104	3.2	1.0
	1829	0.6	0.2		1814	0.4	0.1
	2343	1.5	0.5		2325	1.4	0.4
4	0510	0.5	0.2	19	0445	0.3	0.1
Sa	1225	2.7	0.8	Su	1204	3.1	0.9
	1953	0.7	0.2		1929	0.4	0.1
5	0055	1.2	0.4	20	0044	1.3	0.4
Su	0559	0.7	0.2	M	0547	0.5	0.2
	1334	2.6	0.8		1313	3.0	0.9
	2124	0.7	0.2		2049	0.3	0.1
6	0240	1.2	0.4	21	0221	1.3	0.4
M	0705	0.9	0.3	Tu	0709	0.7	0.2
	1448	2.5	0.8		1429	3.0	0.9
	2230	0.6	0.2		2155	0.2	0.1
7	0411	1.3	0.4	22	0347	1.5	0.5
Tu	0837	0.9	0.3	W	0842	0.7	0.2
	1552	2.5	0.8		1538	2.9	0.9
	2315	0.5	0.2		2246	0.1	0.0
8	0503	1.4	0.4	23	0448	1.8	0.5
W	0953	0.8	0.2	Th	1006	0.6	0.2
	1643	2.6	0.8		1638	2.9	0.9
	2347	0.4	0.1		2327	-0.1	0.0
9	0539	1.7	0.5	24	0538	2.1	0.6
Th	1052	0.7	0.2	F	1115	0.4	0.1
	1725	2.7	0.8		1729	2.9	0.9
10	0013	0.3	0.1	25	0003	-0.2	-0.1
F	0608	1.9	0.6	Sa	0620	2.5	0.8
	1137	0.5	0.2		1213	0.3	0.1
	1800	2.7	0.8		1818	2.8	0.9
11	0034	0.1	0.0	26	0038	-0.2	-0.1
Sa	0637	2.2	0.7	Su	0659	2.8	0.9
	1222	0.4	0.1		1304	0.2	0.1
	1835	2.7	0.8		1900	2.6	0.8
12	0059	0.0	0.0	27	0111	-0.2	-0.1
Su	0708	2.4	0.7	M	0741	3.0	0.9
	1304	0.3	0.1		1356	0.1	0.0
	1908	2.7	0.8		1942	2.4	0.7
13	0122	0.0	0.0	28	0143	-0.2	-0.1
M	0741	2.7	0.8	Tu	0816	3.2	1.0
	1346	0.2	0.1		1445	0.1	0.0
	1942	2.5	0.8		2024	2.1	0.6
14	0151	-0.1	0.0	29	0213	-0.1	0.0
Tu	0815	2.9	0.9	W	0855	3.3	1.0
	1429	0.1	0.0		1537	0.2	0.1
	2018	2.4	0.7		2107	1.9	0.6
15	0219	-0.1	0.0	30	0246	0.1	0.0
W	0851	3.1	0.9	Th	0937	3.3	1.0
	1515	0.1	0.0		1626	0.3	0.1
	2056	2.1	0.6		2149	1.6	0.5

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0320	0.2	0.1	16	0256	0.0	0.0
F	1018	3.1	0.9	Sa	1002	3.6	1.1
	1722	0.4	0.1		1709	0.1	0.0
	2237	1.4	0.4		2229	1.5	0.5
2	0355	0.4	0.1	17	0347	0.1	0.0
Sa	1104	3.0	0.9	Su	1055	3.5	1.1
	1823	0.4	0.1		1812	0.1	0.0
	2338	1.3	0.4		2337	1.4	0.4
3	0434	0.6	0.2	18	0442	0.3	0.1
Su	1154	2.8	0.9	M	1154	3.4	1.0
	1929	0.5	0.2		1918	0.1	0.0
4	0051	1.2	0.4	19	0053	1.4	0.4
M	0522	0.8	0.2	Tu	0551	0.5	0.2
	1251	2.7	0.8		1254	3.2	1.0
	2033	0.5	0.2		2017	0.0	0.0
5	0215	1.2	0.4	20	0214	1.5	0.5
Tu	0625	0.9	0.3	W	0709	0.7	0.2
	1348	2.6	0.8		1400	3.0	0.9
	2127	0.4	0.1		2112	0.0	0.0
6	0329	1.4	0.4	21	0324	1.8	0.5
W	0748	1.0	0.3	Th	0833	0.7	0.2
	1444	2.5	0.8		1502	2.8	0.9
	2209	0.4	0.1		2201	-0.1	0.0
7	0419	1.6	0.5	22	0423	2.1	0.6
Th	0900	1.0	0.3	F	0956	0.7	0.2
	1533	2.5	0.8		1601	2.6	0.8
	2241	0.3	0.1		2243	-0.1	0.0
8	0454	1.8	0.5	23	0515	2.5	0.8
F	1006	0.9	0.3	Sa	1107	0.6	0.2
	1619	2.4	0.7		1654	2.4	0.7
	2307	0.2	0.1		2320	-0.1	0.0
9	0526	2.1	0.6	24	0600	2.8	0.9
Sa	1103	0.8	0.2	Su	1211	0.5	0.2
	1702	2.4	0.7		1746	2.2	0.7
	2331	0.1	0.0		2357	-0.1	0.0
10	0558	2.4	0.7	25	0642	3.0	0.9
Su	1155	0.6	0.2	M	1309	0.4	0.1
	1742	2.3	0.7		1835	2.0	0.6
11	0000	0.0	0.0	26	0030	-0.1	0.0
M	0630	2.7	0.8	Tu	0721	3.2	1.0
	1243	0.4	0.1		1401	0.3	0.1
	1821	2.2	0.7		1921	1.8	0.5
12	0029	-0.1	0.0	27	0104	0.0	0.0
Tu	0708	3.0	0.9	W	0800	3.3	1.0
	1332	0.3	0.1		1450	0.3	0.1
	1907	2.1	0.6		2007	1.6	0.5
13	0101	-0.1	0.0	28	0138	0.1	0.0
W	0745	3.3	1.0	Th	0839	3.4	1.0
	1422	0.2	0.1		1539	0.2	0.1
	1949	1.9	0.6		2053	1.5	0.5
14	0134	-0.1	0.0	29	0215	0.2	0.1
Th	0829	3.5	1.1	F	0921	3.3	1.0
	1515	0.1	0.0		1626	0.2	0.1
	2038	1.8	0.5		2139	1.4	0.4
15	0213	-0.1	0.0	30	0251	0.3	0.1
F	0914	3.6	1.1	Sa	1000	3.3	1.0
	1611	0.1	0.0		1713	0.3	0.1
	2130	1.6	0.5		2229	1.3	0.4
				31	0333	0.4	0.1
				Su	1042	3.1	0.9
					1802	0.3	0.1
					2325	1.3	0.4

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0412	0.6	0.2	16	0440	0.2	0.1
M	1125	3.0	0.9	Tu	1137	3.5	1.1
	1851	0.3	0.1		1844	-0.2	-0.1
2	0025	1.3	0.4	17	0033	1.7	0.5
Tu	0457	0.7	0.2	W	0546	0.4	0.1
	1207	2.8	0.9		1232	3.3	1.0
	1937	0.3	0.1		1936	-0.2	-0.1
3	0125	1.3	0.4	18	0143	1.9	0.6
W	0553	0.9	0.3	Th	0659	0.6	0.2
	1252	2.7	0.8		1325	2.9	0.9
	2018	0.3	0.1		2026	-0.1	0.0
4	0227	1.5	0.5	19	0249	2.1	0.6
Th	0655	1.0	0.3	F	0821	0.8	0.2
	1338	2.5	0.8		1423	2.6	0.8
	2055	0.3	0.1		2112	-0.1	0.0
5	0316	1.7	0.5	20	0353	2.4	0.7
F	0804	1.1	0.3	Sa	0945	0.8	0.2
	1424	2.4	0.7		1522	2.2	0.7
	2127	0.3	0.1		2156	0.0	0.0
6	0358	1.9	0.6	21	0450	2.7	0.8
Sa	0918	1.0	0.3	Su	1104	0.8	0.2
	1509	2.2	0.7		1625	1.9	0.6
	2156	0.2	0.1		2238	0.0	0.0
7	0440	2.2	0.7	22	0539	2.9	0.9
Su	1028	0.9	0.3	M	1218	0.6	0.2
	1559	2.0	0.6		1721	1.7	0.5
	2227	0.1	0.0		2318	0.1	0.0
8	0519	2.6	0.8	23	0624	3.1	0.9
M	1133	0.8	0.2	Tu	1317	0.5	0.2
	1650	1.9	0.6		1819	1.5	0.5
	2302	0.0	0.0		2358	0.1	0.0
9	0557	2.9	0.9	24	0708	3.3	1.0
Tu	1233	0.6	0.2	W	1406	0.4	0.1
	1745	1.8	0.5		1911	1.4	0.4
	2341	-0.1	0.0				
10	0642	3.3	1.0	25	0036	0.1	0.0
W	1327	0.4	0.1	Th	0747	3.3	1.0
	1838	1.7	0.5		1451	0.3	0.1
					2000	1.4	0.4
11	0021	-0.1	0.0	26	0118	0.2	0.1
Th	0727	3.5	1.1	F	0827	3.4	1.0
	1421	0.2	0.1		1533	0.2	0.1
	1933	1.6	0.5		2044	1.4	0.4
12	0106	-0.2	-0.1	27	0157	0.2	0.1
F	0814	3.7	1.1	Sa	0905	3.4	1.0
	1512	0.0	0.0		1609	0.2	0.1
	2027	1.6	0.5		2127	1.4	0.4
13	0154	-0.2	-0.1	28	0237	0.3	0.1
Sa	0902	3.9	1.2	Su	0942	3.3	1.0
	1605	-0.1	0.0		1650	0.2	0.1
	2124	1.5	0.5		2210	1.4	0.4
14	0246	-0.1	0.0	29	0316	0.4	0.1
Su	0952	3.9	1.2	M	1017	3.2	1.0
	1658	-0.1	0.0		1725	0.2	0.1
	2226	1.5	0.5		2253	1.4	0.4
15	0341	0.0	0.0	30	0356	0.5	0.2
M	1044	3.8	1.2	Tu	1053	3.1	0.9
	1752	-0.2	-0.1		1801	0.2	0.1
	2327	1.6	0.5		2340	1.5	0.5

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0438	0.6	0.2	16	0004	2.1	0.6
W	1128	2.9	0.9	Th	0534	0.3	0.1
	1836	0.2	0.1		1201	3.1	0.9
					1847	-0.2	-0.1
2	0028	1.5	0.5	17	0104	2.2	0.7
Th	0521	0.8	0.2	F	0644	0.6	0.2
	1203	2.7	0.8		1252	2.6	0.8
	1909	0.2	0.1		1934	-0.1	0.0
3	0121	1.7	0.5	18	0210	2.4	0.7
F	0610	0.9	0.3	Sa	0805	0.8	0.2
	1238	2.5	0.8		1348	2.2	0.7
	1940	0.3	0.1		2021	0.1	0.0
4	0206	1.8	0.5	19	0319	2.5	0.8
Sa	0718	1.1	0.3	Su	0938	0.9	0.3
	1315	2.2	0.7		1451	1.8	0.5
	2011	0.3	0.1		2112	0.2	0.1
5	0258	2.1	0.6	20	0422	2.7	0.8
Su	0839	1.1	0.3	M	1110	0.8	0.2
	1401	2.0	0.6		1603	1.5	0.5
	2046	0.2	0.1		2201	0.2	0.1
6	0351	2.3	0.7	21	0520	2.9	0.9
M	1003	1.0	0.3	Tu	1226	0.7	0.2
	1502	1.7	0.5		1715	1.4	0.4
	2127	0.2	0.1		2253	0.3	0.1
7	0442	2.7	0.8	22	0611	3.1	0.9
Tu	1122	0.9	0.3	W	1319	0.5	0.2
	1611	1.6	0.5		1818	1.3	0.4
	2213	0.1	0.0		2339	0.3	0.1
8	0532	3.0	0.9	23	0654	3.2	1.0
W	1226	0.6	0.2	Th	1400	0.4	0.1
	1720	1.5	0.5		1907	1.4	0.4
	2304	0.0	0.0				
9	0621	3.4	1.0	24	0026	0.2	0.1
Th	1323	0.4	0.1	F	0733	3.3	1.0
	1822	1.5	0.5		1436	0.3	0.1
	2357	-0.1	0.0		1950	1.5	0.5
10	0712	3.7	1.1	25	0106	0.2	0.1
F	1412	0.1	0.0	Sa	0810	3.3	1.0
	1922	1.5	0.5		1507	0.2	0.1
					2026	1.5	0.5
11	0053	-0.2	-0.1	26	0148	0.2	0.1
Sa	0759	3.9	1.2	Su	0843	3.3	1.0
	1501	-0.1	0.0		1539	0.1	0.0
	2020	1.6	0.5		2104	1.6	0.5
12	0148	-0.2	-0.1	27	0224	0.2	0.1
Su	0848	4.0	1.2	M	0916	3.3	1.0
	1546	-0.2	-0.1		1608	0.1	0.0
	2114	1.7	0.5		2139	1.7	0.5
13	0242	-0.2	-0.1	28	0302	0.2	0.1
M	0937	3.9	1.2	Tu	0946	3.2	1.0
	1632	-0.3	-0.1		1637	0.1	0.0
	2208	1.9	0.6		2218	1.8	0.5
14	0336	-0.1	0.0	29	0338	0.4	0.1
Tu	1024	3.8	1.2	W	1018	3.1	0.9
	1717	-0.3	-0.1		1708	0.1	0.0
	2305	2.0	0.6		2254	1.8	0.5
15	0433	0.1	0.0	30	0416	0.5	0.2
W	1111	3.5	1.1	Th	1046	2.8	0.9
	1803	-0.3	-0.1		1734	0.2	0.1
					2336	1.9	0.6
				31	0458	0.7	0.2
				F	1117	2.6	0.8
					1802	0.2	0.1

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0015	2.0	0.6	16	0127	2.6	0.8
Sa	0546	0.8	0.2	Su	0753	0.8	0.2
	1146	2.3	0.7		1316	1.8	0.5
	1828	0.3	0.1		1927	0.3	0.1
2	0105	2.1	0.6	17	0240	2.6	0.8
Su	0649	1.0	0.3	M	0936	0.8	0.2
	1224	2.0	0.6		1433	1.4	0.4
	1901	0.3	0.1		2026	0.5	0.2
3	0204	2.2	0.7	18	0355	2.7	0.8
M	0815	1.1	0.3	Tu	1112	0.7	0.2
	1313	1.7	0.5		1606	1.3	0.4
	1943	0.3	0.1		2132	0.5	0.2
4	0308	2.5	0.8	19	0457	2.8	0.9
Tu	0958	1.0	0.3	W	1218	0.6	0.2
	1422	1.4	0.4		1723	1.3	0.4
	2036	0.3	0.1		2235	0.5	0.2
5	0414	2.7	0.8	20	0551	2.9	0.9
W	1124	0.8	0.2	Th	1302	0.4	0.1
	1555	1.3	0.4		1818	1.4	0.4
	2140	0.3	0.1		2330	0.4	0.1
6	0513	3.1	0.9	21	0634	3.1	0.9
Th	1226	0.5	0.2	F	1334	0.3	0.1
	1718	1.3	0.4		1856	1.5	0.5
	2246	0.1	0.0				
7	0607	3.4	1.0	22	0012	0.3	0.1
F	1311	0.2	0.1	Sa	0710	3.1	0.9
	1821	1.5	0.5		1400	0.2	0.1
	2349	0.0	0.0		1928	1.7	0.5
8	0656	3.7	1.1	23	0054	0.2	0.1
Sa	1353	0.0	0.0	Su	0742	3.2	1.0
	1917	1.7	0.5		1425	0.1	0.0
					2000	1.8	0.5
9	0047	-0.2	-0.1	24	0133	0.2	0.1
Su	0744	3.8	1.2	M	0812	3.2	1.0
	1435	-0.2	-0.1		1453	0.1	0.0
	2007	1.9	0.6		2032	2.0	0.6
10	0143	-0.3	-0.1	25	0208	0.1	0.0
M	0830	3.9	1.2	Tu	0841	3.2	1.0
	1516	-0.3	-0.1		1518	0.0	0.0
	2055	2.1	0.6		2104	2.1	0.6
11	0235	-0.3	-0.1	26	0243	0.2	0.1
Tu	0915	3.8	1.2	W	0911	3.0	0.9
	1555	-0.4	-0.1		1544	0.0	0.0
	2145	2.3	0.7		2136	2.2	0.7
12	0328	-0.2	-0.1	27	0320	0.3	0.1
W	1000	3.5	1.1	Th	0941	2.8	0.9
	1634	-0.3	-0.1		1608	0.1	0.0
	2234	2.4	0.7		2211	2.3	0.7
13	0423	0.0	0.0	28	0400	0.4	0.1
Th	1045	3.1	0.9	F	1006	2.6	0.8
	1715	-0.2	-0.1		1632	0.2	0.1
	2327	2.5	0.8		2247	2.3	0.7
14	0522	0.3	0.1	29	0443	0.6	0.2
F	1127	2.7	0.8	Sa	1039	2.3	0.7
	1754	-0.1	0.0		1658	0.2	0.1
					2329	2.4	0.7
15	0025	2.6	0.8	30	0534	0.7	0.2
Sa	0630	0.6	0.2	Su	1113	2.0	0.6
	1217	2.2	0.7		1726	0.3	0.1
	1839	0.1	0.0				
				31	0016	2.4	0.7
				M	0640	0.9	0.3
					1149	1.6	0.5
					1802	0.4	0.1

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0120	2.5	0.8	16	0317	2.6	0.8
Tu	0821	1.0	0.3	W	1056	0.6	0.2
	1252	1.4	0.4		1617	1.3	0.4
	1852	0.5	0.2		2103	0.8	0.2
2	0236	2.6	0.8	17	0423	2.7	0.8
W	1006	0.8	0.2	Th	1145	0.5	0.2
	1435	1.2	0.4		1720	1.4	0.4
	2009	0.5	0.2		2219	0.7	0.2
3	0350	2.8	0.9	18	0515	2.8	0.9
Th	1118	0.6	0.2	F	1221	0.4	0.1
	1617	1.3	0.4		1758	1.6	0.5
	2132	0.4	0.1		2312	0.6	0.2
4	0456	3.1	0.9	19	0557	2.9	0.9
F	1206	0.3	0.1	Sa	1249	0.3	0.1
	1726	1.5	0.5		1830	1.8	0.5
	2246	0.3	0.1		2357	0.4	0.1
5	0549	3.3	1.0	20	0632	2.9	0.9
Sa	1246	0.1	0.0	Su	1311	0.2	0.1
	1818	1.7	0.5		1859	2.0	0.6
	2350	0.0	0.0				
6	0637	3.5	1.1	21	0035	0.3	0.1
Su	1324	-0.1	0.0	M	0703	3.0	0.9
	1906	2.0	0.6		1336	0.1	0.0
					1928	2.2	0.7
7	0042	-0.1	0.0	22	0114	0.2	0.1
M	0723	3.6	1.1	Tu	0733	2.9	0.9
	1400	-0.3	-0.1		1358	0.0	0.0
	1951	2.3	0.7		1958	2.4	0.7
8	0136	-0.2	-0.1	23	0149	0.2	0.1
Tu	0807	3.5	1.1	W	0805	2.8	0.9
	1435	-0.4	-0.1		1423	0.0	0.0
	2034	2.6	0.8		2028	2.5	0.8
9	0228	-0.3	-0.1	24	0228	0.2	0.1
W	0849	3.3	1.0	Th	0833	2.7	0.8
	1512	-0.4	-0.1		1447	0.0	0.0
	2119	2.8	0.9		2100	2.7	0.8
10	0320	-0.2	-0.1	25	0307	0.2	0.1
Th	0931	3.0	0.9	F	0905	2.5	0.8
	1549	-0.3	-0.1		1512	0.0	0.0
	2205	2.9	0.9		2136	2.8	0.9
11	0413	0.0	0.0	26	0348	0.3	0.1
F	1013	2.6	0.8	Sa	0937	2.2	0.7
	1624	-0.1	0.0		1538	0.1	0.0
	2253	2.9	0.9		2214	2.8	0.9
12	0512	0.3	0.1	27	0437	0.5	0.2
Sa	1058	2.2	0.7	Su	1013	1.9	0.6
	1703	0.1	0.0		1605	0.2	0.1
	2345	2.8	0.9		2255	2.8	0.9
13	0620	0.5	0.2	28	0536	0.6	0.2
Su	1151	1.8	0.5	M	1052	1.6	0.5
	1743	0.3	0.1		1637	0.4	0.1
					2348	2.8	0.9
14	0046	2.7	0.8	29	0655	0.7	0.2
M	0748	0.7	0.2	Tu	1150	1.3	0.4
	1257	1.4	0.4		1719	0.5	0.2
	1831	0.5	0.2				
15	0159	2.6	0.8	30	0054	2.7	0.8
Tu	0930	0.7	0.2	W	0831	0.7	0.2
	1436	1.2	0.4		1320	1.2	0.4
	1942	0.7	0.2		1824	0.6	0.2

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

MATARANI, PERU, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0211	2.8	0.9	16	0332	2.6	0.8
Th	0953	0.5	0.2	F	1053	0.4	0.1
	1511	1.2	0.4		1651	1.5	0.5
	2000	0.7	0.2		2143	0.9	0.3
2	0327	2.9	0.9	17	0426	2.6	0.8
F	1052	0.3	0.1	Sa	1125	0.3	0.1
	1630	1.4	0.4		1727	1.7	0.5
	2133	0.6	0.2		2242	0.7	0.2
3	0431	3.0	0.9	18	0508	2.6	0.8
Sa	1134	0.1	0.0	Su	1152	0.2	0.1
	1723	1.8	0.5		1758	2.0	0.6
	2243	0.4	0.1		2328	0.6	0.2
4	0525	3.1	0.9	19	0543	2.6	0.8
Su	1211	-0.1	0.0	M	1216	0.1	0.0
	1808	2.1	0.6		1826	2.2	0.7
	2345	0.2	0.1				
5	0611	3.2	1.0	20	0013	0.5	0.2
M	1248	-0.2	-0.1	Tu	0616	2.6	0.8
	1851	2.5	0.8		1240	0.0	0.0
					1855	2.5	0.8
6	0040	0.0	0.0	21	0051	0.4	0.1
Tu	0656	3.1	0.9	W	0651	2.5	0.8
	1321	-0.3	-0.1		1304	0.0	0.0
	1932	2.8	0.9		1924	2.7	0.8
7	0133	-0.1	0.0	22	0133	0.3	0.1
W	0741	3.0	0.9	Th	0723	2.4	0.7
	1354	-0.4	-0.1		1330	-0.1	0.0
	2011	3.0	0.9		1956	2.9	0.9
8	0223	-0.1	0.0	23	0215	0.2	0.1
Th	0823	2.7	0.8	F	0759	2.2	0.7
	1428	-0.3	-0.1		1355	-0.1	0.0
	2054	3.2	1.0		2031	3.1	0.9
9	0315	0.0	0.0	24	0259	0.2	0.1
F	0905	2.4	0.7	Sa	0836	2.0	0.6
	1503	-0.2	-0.1		1425	0.0	0.0
	2136	3.2	1.0		2107	3.2	1.0
10	0403	0.1	0.0	25	0349	0.3	0.1
Sa	0947	2.1	0.6	Su	0915	1.8	0.5
	1537	0.0	0.0		1456	0.1	0.0
	2224	3.2	1.0		2149	3.2	1.0
11	0506	0.3	0.1	26	0444	0.3	0.1
Su	1037	1.7	0.5	M	1001	1.6	0.5
	1615	0.2	0.1		1532	0.2	0.1
	2313	3.0	0.9		2239	3.2	1.0
12	0615	0.4	0.1	27	0547	0.4	0.1
M	1135	1.4	0.4	Tu	1053	1.4	0.4
	1653	0.5	0.2		1614	0.3	0.1
					2332	3.1	0.9
13	0009	2.8	0.9	28	0700	0.4	0.1
Tu	0738	0.5	0.2	W	1210	1.2	0.4
	1252	1.2	0.4		1706	0.5	0.2
	1743	0.7	0.2				
14	0115	2.7	0.8	29	0039	3.0	0.9
W	0902	0.5	0.2	Th	0815	0.4	0.1
	1437	1.2	0.4		1345	1.2	0.4
	1858	0.9	0.3		1823	0.7	0.2
15	0229	2.6	0.8	30	0149	2.9	0.9
Th	1011	0.5	0.2	F	0921	0.2	0.1
	1606	1.3	0.4		1513	1.4	0.4
	2027	0.9	0.3		1958	0.7	0.2
				31	0258	2.9	0.9
				Sa	1014	0.1	0.0
					1618	1.7	0.5
					2128	0.7	0.2

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0400	2.9	0.9	16	0403	2.4	0.7
Su	1056	0.0	0.0	M	1049	0.2	0.1
	1707	2.1	0.6		1716	2.1	0.6
	2241	0.5	0.2		2256	0.8	0.2
2	0456	2.8	0.9	17	0445	2.3	0.7
M	1131	-0.2	-0.1	Tu	1115	0.1	0.0
	1753	2.5	0.8		1748	2.4	0.7
	2344	0.4	0.1		2347	0.7	0.2
3	0542	2.7	0.8	18	0526	2.2	0.7
Tu	1208	-0.2	-0.1	W	1142	0.0	0.0
	1832	2.8	0.9		1820	2.7	0.8
4	0040	0.2	0.1	19	0034	0.5	0.2
W	0630	2.5	0.8	Th	0605	2.1	0.6
	1242	-0.3	-0.1		1210	0.0	0.0
	1914	3.1	0.9		1852	3.0	0.9
5	0133	0.1	0.0	20	0121	0.4	0.1
Th	0716	2.3	0.7	F	0647	2.0	0.6
	1315	-0.3	-0.1		1242	-0.1	0.0
	1953	3.3	1.0		1930	3.3	1.0
6	0225	0.1	0.0	21	0209	0.3	0.1
F	0801	2.1	0.6	Sa	0729	1.8	0.5
	1350	-0.2	-0.1		1314	-0.1	0.0
	2035	3.4	1.0		2009	3.4	1.0
7	0317	0.1	0.0	22	0257	0.2	0.1
Sa	0847	1.8	0.5	Su	0815	1.7	0.5
	1425	0.0	0.0		1353	-0.1	0.0
	2117	3.4	1.0		2051	3.6	1.1
8	0410	0.2	0.1	23	0347	0.1	0.0
Su	0935	1.6	0.5	M	0906	1.6	0.5
	1501	0.1	0.0		1432	0.0	0.0
	2202	3.3	1.0		2138	3.6	1.1
9	0509	0.2	0.1	24	0445	0.1	0.0
M	1024	1.4	0.4	Tu	0959	1.4	0.4
	1539	0.3	0.1		1517	0.1	0.0
	2248	3.2	1.0		2228	3.5	1.1
10	0607	0.3	0.1	25	0543	0.1	0.0
Tu	1125	1.3	0.4	W	1101	1.4	0.4
	1618	0.5	0.2		1609	0.3	0.1
	2338	3.0	0.9		2322	3.4	1.0
11	0712	0.4	0.1	26	0643	0.1	0.0
W	1235	1.2	0.4	Th	1212	1.4	0.4
	1709	0.7	0.2		1711	0.4	0.1
12	0033	2.8	0.9	27	0019	3.2	1.0
Th	0812	0.4	0.1	F	0740	0.1	0.0
	1400	1.3	0.4		1331	1.5	0.5
	1812	0.9	0.3		1825	0.6	0.2
13	0130	2.6	0.8	28	0120	3.0	0.9
F	0908	0.4	0.1	Sa	0835	0.0	0.0
	1513	1.4	0.4		1447	1.7	0.5
	1935	1.0	0.3		1950	0.8	0.2
14	0224	2.5	0.8	29	0222	2.8	0.9
Sa	0950	0.3	0.1	Su	0926	-0.1	0.0
	1605	1.6	0.5		1550	2.0	0.6
	2052	1.0	0.3		2116	0.8	0.2
15	0316	2.4	0.7	30	0322	2.6	0.8
Su	1022	0.3	0.1	M	1009	-0.1	0.0
	1648	1.8	0.5		1645	2.4	0.7
	2158	1.0	0.3		2235	0.7	0.2

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0420	2.4	0.7	16	0340	1.9	0.6
Tu	1051	-0.1	0.0	W	1009	0.2	0.1
	1733	2.8	0.9		1709	2.5	0.8
	2347	0.6	0.2		2326	0.9	0.3
2	0518	2.1	0.6	17	0433	1.8	0.5
W	1129	-0.1	0.0	Th	1044	0.1	0.0
	1818	3.1	0.9		1748	2.8	0.9
3	0046	0.4	0.1	18	0023	0.7	0.2
Th	0611	1.9	0.6	F	0526	1.7	0.5
	1205	-0.1	0.0		1121	0.0	0.0
	1901	3.3	1.0		1828	3.1	0.9
4	0141	0.3	0.1	19	0116	0.5	0.2
F	0701	1.8	0.5	Sa	0621	1.6	0.5
	1242	-0.1	0.0		1203	0.0	0.0
	1943	3.5	1.1		1911	3.4	1.0
5	0233	0.2	0.1	20	0204	0.3	0.1
Sa	0750	1.6	0.5	Su	0714	1.6	0.5
	1321	0.0	0.0		1246	-0.1	0.0
	2023	3.5	1.1		1954	3.7	1.1
6	0322	0.2	0.1	21	0253	0.1	0.0
Su	0838	1.5	0.5	M	0806	1.5	0.5
	1400	0.1	0.0		1334	-0.2	-0.1
	2105	3.5	1.1		2040	3.8	1.2
7	0408	0.1	0.0	22	0341	0.0	0.0
M	0925	1.4	0.4	Tu	0859	1.5	0.5
	1438	0.2	0.1		1423	-0.1	0.0
	2146	3.4	1.0		2127	3.9	1.2
8	0457	0.2	0.1	23	0431	-0.1	0.0
Tu	1013	1.4	0.4	W	0955	1.6	0.5
	1520	0.3	0.1		1515	-0.1	0.0
	2226	3.3	1.0		2214	3.8	1.2
9	0542	0.2	0.1	24	0519	-0.2	-0.1
W	1106	1.3	0.4	Th	1052	1.6	0.5
	1602	0.5	0.2		1608	0.1	0.0
	2309	3.1	0.9		2303	3.6	1.1
10	0631	0.2	0.1	25	0609	-0.2	-0.1
Th	1202	1.3	0.4	F	1154	1.7	0.5
	1644	0.7	0.2		1709	0.3	0.1
	2351	2.9	0.9		2355	3.3	1.0
11	0713	0.3	0.1	26	0657	-0.1	0.0
F	1300	1.4	0.4	Sa	1259	1.9	0.6
	1736	0.8	0.2		1815	0.5	0.2
12	0033	2.7	0.8	27	0048	3.0	0.9
Sa	0755	0.3	0.1	Su	0745	-0.1	0.0
	1403	1.5	0.5		1409	2.1	0.6
	1835	1.0	0.3		1934	0.7	0.2
13	0115	2.5	0.8	28	0144	2.6	0.8
Su	0833	0.3	0.1	M	0834	-0.1	0.0
	1459	1.7	0.5		1518	2.3	0.7
	1945	1.1	0.3		2106	0.8	0.2
14	0200	2.3	0.7	29	0244	2.2	0.7
M	0908	0.3	0.1	Tu	0922	0.0	0.0
	1548	1.9	0.6		1619	2.6	0.8
	2104	1.1	0.3		2236	0.8	0.2
15	0249	2.1	0.6	30	0351	1.9	0.6
Tu	0937	0.3	0.1	W	1009	0.0	0.0
	1630	2.2	0.7		1715	2.9	0.9
	2219	1.0	0.3		2355	0.7	0.2
				31	0500	1.6	0.5
				Th	1056	0.1	0.0
					1808	3.1	0.9

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0104	0.9	0.3	16	0143	1.2	0.4
Th	0553	2.0	0.6	F	0611	1.8	0.5
	1200	-0.2	-0.1		1207	0.4	0.1
	1916	3.8	1.2		1929	3.3	1.0
2	0200	0.8	0.2	17	0215	1.2	0.4
F	0652	2.0	0.6	Sa	0648	1.8	0.5
	1251	-0.1	0.0		1239	0.5	0.2
	2003	3.7	1.1		1955	3.2	1.0
3	0252	0.8	0.2	18	0243	1.2	0.4
Sa	0753	1.9	0.6	Su	0724	1.8	0.5
	1344	0.2	0.1		1310	0.6	0.2
	2053	3.6	1.1		2023	3.1	0.9
4	0347	0.7	0.2	19	0312	1.1	0.3
Su	0859	1.9	0.6	M	0803	1.8	0.5
	1439	0.5	0.2		1345	0.8	0.2
	2141	3.3	1.0		2048	2.9	0.9
5	0440	0.7	0.2	20	0336	1.1	0.3
M	1015	1.9	0.6	Tu	0851	1.9	0.6
	1538	0.8	0.2		1421	1.0	0.3
	2230	3.1	0.9		2112	2.8	0.9
6	0535	0.7	0.2	21	0405	1.0	0.3
Tu	1134	2.0	0.6	W	0949	1.9	0.6
	1650	1.2	0.4		1506	1.2	0.4
	2319	2.7	0.8		2139	2.6	0.8
7	0626	0.6	0.2	22	0441	0.9	0.3
W	1300	2.2	0.7	Th	1102	2.1	0.6
	1819	1.4	0.4		1609	1.5	0.5
					2215	2.4	0.7
8	0014	2.4	0.7	23	0523	0.8	0.2
Th	0714	0.6	0.2	F	1226	2.3	0.7
	1419	2.4	0.7		1744	1.7	0.5
	1957	1.6	0.5		2303	2.3	0.7
9	0103	2.2	0.7	24	0616	0.6	0.2
F	0759	0.6	0.2	Sa	1345	2.5	0.8
	1521	2.6	0.8		1943	1.7	0.5
	2124	1.5	0.5				
10	0159	2.0	0.6	25	0009	2.1	0.6
Sa	0841	0.5	0.2	Su	0716	0.5	0.2
	1607	2.8	0.9		1454	2.9	0.9
	2235	1.5	0.5		2116	1.6	0.5
11	0249	1.9	0.6	26	0131	2.0	0.6
Su	0919	0.5	0.2	M	0818	0.3	0.1
	1646	3.0	0.9		1550	3.2	1.0
	2325	1.4	0.4		2222	1.4	0.4
12	0336	1.8	0.5	27	0251	2.0	0.6
M	0952	0.4	0.1	Tu	0916	0.1	0.0
	1721	3.1	0.9		1641	3.5	1.1
					2318	1.2	0.4
13	0007	1.3	0.4	28	0400	2.1	0.6
Tu	0418	1.8	0.5	W	1012	0.0	0.0
	1027	0.4	0.1		1727	3.7	1.1
	1753	3.2	1.0				
14	0039	1.3	0.4	29	0003	1.0	0.3
W	0457	1.8	0.5	Th	0500	2.2	0.7
	1103	0.4	0.1		1107	-0.1	0.0
	1825	3.3	1.0		1813	3.9	1.2
15	0111	1.2	0.4	30	0049	0.8	0.2
Th	0534	1.8	0.5	F	0555	2.3	0.7
	1135	0.4	0.1		1156	0.0	0.0
	1857	3.3	1.0		1856	3.9	1.2
				31	0131	0.7	0.2
				Sa	0649	2.3	0.7
					1246	0.1	0.0
					1941	3.7	1.1

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0216	0.7	0.2	16	0144	1.0	0.3
Su	0743	2.4	0.7	M	0710	2.3	0.7
	1334	0.3	0.1		1302	0.7	0.2
	2021	3.5	1.1		1939	3.1	0.9
2	0258	0.7	0.2	17	0206	1.0	0.3
M	0840	2.3	0.7	Tu	0747	2.3	0.7
	1426	0.7	0.2		1337	0.9	0.3
	2102	3.2	1.0		2003	2.9	0.9
3	0344	0.7	0.2	18	0231	0.9	0.3
Tu	0939	2.3	0.7	W	0833	2.4	0.7
	1518	1.0	0.3		1414	1.1	0.3
	2141	2.9	0.9		2025	2.7	0.8
4	0429	0.7	0.2	19	0259	0.9	0.3
W	1051	2.3	0.7	Th	0921	2.4	0.7
	1621	1.4	0.4		1502	1.4	0.4
	2221	2.5	0.8		2051	2.5	0.8
5	0515	0.8	0.2	20	0335	0.8	0.2
Th	1213	2.4	0.7	F	1024	2.5	0.8
	1755	1.7	0.5		1607	1.6	0.5
	2305	2.2	0.7		2121	2.3	0.7
6	0608	0.9	0.3	21	0421	0.8	0.2
F	1344	2.5	0.8	Sa	1153	2.6	0.8
	2005	1.8	0.5		1755	1.8	0.5
					2210	2.1	0.6
7	0000	1.9	0.6	22	0527	0.8	0.2
Sa	0703	0.9	0.3	Su	1330	2.8	0.9
	1458	2.7	0.8		2016	1.8	0.5
	2206	1.7	0.5		2346	1.9	0.6
8	0126	1.8	0.5	23	0647	0.7	0.2
Su	0804	0.9	0.3	M	1439	3.0	0.9
	1550	2.8	0.9		2135	1.5	0.5
	2254	1.5	0.5				
9	0239	1.7	0.5	24	0143	1.9	0.6
M	0852	0.8	0.2	Tu	0805	0.6	0.2
	1627	3.0	0.9		1538	3.3	1.0
	2323	1.4	0.4		2224	1.3	0.4
10	0334	1.8	0.5	25	0306	2.0	0.6
Tu	0937	0.7	0.2	W	0911	0.4	0.1
	1703	3.1	0.9		1625	3.6	1.1
	2348	1.3	0.4		2304	1.1	0.3
11	0419	1.9	0.6	26	0408	2.2	0.7
W	1015	0.6	0.2	Th	1010	0.3	0.1
	1731	3.2	1.0		1710	3.7	1.1
					2341	0.9	0.3
12	0010	1.2	0.4	27	0502	2.4	0.7
Th	0455	2.0	0.6	F	1102	0.2	0.1
	1051	0.5	0.2		1749	3.8	1.2
	1757	3.3	1.0				
13	0035	1.2	0.4	28	0020	0.7	0.2
F	0527	2.1	0.6	Sa	0553	2.6	0.8
	1123	0.5	0.2		1151	0.2	0.1
	1826	3.3	1.0		1831	3.7	1.1
14	0057	1.1	0.3				
Sa	0602	2.2	0.7				
	1155	0.5	0.2				
	1851	3.3	1.0				
15	0121	1.0	0.3				
Su	0637	2.2	0.7				
	1230	0.6	0.2				
	1916	3.2	1.0				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0055	0.6	0.2	16	0026	0.8	0.2
Su	0640	2.7	0.8	M	0618	2.7	0.8
	1236	0.4	0.1		1214	0.8	0.2
	1907	3.5	1.1		1831	3.1	0.9
2	0132	0.6	0.2	17	0048	0.8	0.2
M	0726	2.8	0.9	Tu	0653	2.8	0.9
	1324	0.6	0.2		1253	0.9	0.3
	1942	3.2	1.0		1855	2.9	0.9
3	0206	0.6	0.2	18	0113	0.7	0.2
Tu	0817	2.8	0.9	W	0732	2.9	0.9
	1411	0.9	0.3		1332	1.1	0.3
	2019	2.9	0.9		1921	2.7	0.8
4	0243	0.7	0.2	19	0141	0.7	0.2
W	0907	2.7	0.8	Th	0814	2.9	0.9
	1504	1.3	0.4		1417	1.3	0.4
	2051	2.6	0.8		1949	2.5	0.8
5	0318	0.8	0.2	20	0211	0.7	0.2
Th	1006	2.6	0.8	F	0906	2.9	0.9
	1606	1.6	0.5		1514	1.5	0.5
	2118	2.2	0.7		2017	2.3	0.7
6	0357	1.0	0.3	21	0250	0.7	0.2
F	1125	2.6	0.8	Sa	1012	2.9	0.9
	1751	1.8	0.5		1641	1.7	0.5
	2145	2.0	0.6		2052	2.1	0.6
7	0446	1.1	0.3	22	0343	0.8	0.2
Sa	1258	2.6	0.8	Su	1138	2.9	0.9
					1857	1.7	0.5
					2205	1.8	0.5
8	0557	1.2	0.4	23	0500	0.9	0.3
Su	1426	2.7	0.8	M	1309	3.0	0.9
	2221	1.6	0.5		2039	1.5	0.5
9	0119	1.7	0.5	24	0029	1.8	0.5
M	0720	1.2	0.4	Tu	0637	0.9	0.3
	1514	2.8	0.9		1421	3.2	1.0
	2236	1.5	0.5		2126	1.3	0.4
10	0249	1.7	0.5	25	0212	1.9	0.6
Tu	0823	1.1	0.3	W	0800	0.8	0.2
	1553	3.0	0.9		1514	3.4	1.0
	2254	1.4	0.4		2205	1.1	0.3
11	0333	1.9	0.6	26	0321	2.2	0.7
W	0914	1.0	0.3	Th	0909	0.7	0.2
	1625	3.1	0.9		1601	3.5	1.1
	2308	1.3	0.4		2237	0.9	0.3
12	0406	2.0	0.6	27	0411	2.5	0.8
Th	0953	0.8	0.2	F	1005	0.6	0.2
	1649	3.2	1.0		1642	3.5	1.1
	2324	1.1	0.3		2312	0.7	0.2
13	0441	2.2	0.7	28	0501	2.7	0.8
F	1028	0.8	0.2	Sa	1054	0.6	0.2
	1716	3.2	1.0		1719	3.5	1.1
	2345	1.0	0.3		2344	0.5	0.2
14	0513	2.4	0.7	29	0543	3.0	0.9
Sa	1104	0.7	0.2	Su	1142	0.6	0.2
	1741	3.2	1.0		1754	3.3	1.0
15	0004	0.9	0.3	30	0016	0.5	0.2
Su	0545	2.5	0.8	M	0628	3.1	0.9
	1139	0.7	0.2		1228	0.8	0.2
	1808	3.2	1.0		1830	3.1	0.9
				31	0047	0.5	0.2
				Tu	0710	3.1	0.9
					1315	1.0	0.3
					1902	2.8	0.9

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0117	0.5	0.2	16	0031	0.4	0.1
W	0755	3.1	0.9	Th	0720	3.3	1.0
	1403	1.2	0.4		1334	1.2	0.4
	1930	2.5	0.8		1848	2.4	0.7
2	0147	0.7	0.2	17	0103	0.5	0.2
Th	0841	3.0	0.9	F	0805	3.3	1.0
	1456	1.5	0.5		1430	1.4	0.4
	1959	2.2	0.7		1923	2.2	0.7
3	0216	0.8	0.2	18	0140	0.5	0.2
F	0930	2.9	0.9	Sa	0901	3.3	1.0
	1609	1.7	0.5		1546	1.5	0.5
	2022	2.0	0.6		2008	2.0	0.6
4	0246	1.0	0.3	19	0227	0.7	0.2
Sa	1036	2.8	0.9	Su	1009	3.2	1.0
	1826	1.7	0.5		1730	1.6	0.5
	2027	1.8	0.5		2111	1.8	0.5
5	0320	1.2	0.4	20	0328	0.8	0.2
Su	1158	2.7	0.8	M	1126	3.2	1.0
					1906	1.4	0.4
					2306	1.7	0.5
6	0427	1.3	0.4	21	0453	1.0	0.3
M	1319	2.7	0.8	Tu	1245	3.2	1.0
	2142	1.5	0.5		2012	1.2	0.4
7	0127	1.6	0.5	22	0108	1.8	0.5
Tu	0614	1.4	0.4	W	0629	1.1	0.3
	1415	2.8	0.9		1349	3.3	1.0
	2150	1.4	0.4		2054	1.0	0.3
8	0236	1.8	0.5	23	0226	2.1	0.6
W	0736	1.3	0.4	Th	0751	1.0	0.3
	1455	2.9	0.9		1441	3.3	1.0
	2158	1.3	0.4		2129	0.8	0.2
9	0313	2.0	0.6	24	0321	2.4	0.7
Th	0836	1.2	0.4	F	0900	1.0	0.3
	1526	3.0	0.9		1526	3.3	1.0
	2213	1.1	0.3		2204	0.6	0.2
10	0345	2.2	0.7	25	0410	2.7	0.8
F	0921	1.1	0.3	Sa	0956	0.9	0.3
	1553	3.0	0.9		1608	3.2	1.0
	2228	1.0	0.3		2234	0.5	0.2
11	0417	2.4	0.7	26	0452	3.0	0.9
Sa	0959	1.0	0.3	Su	1048	1.0	0.3
	1622	3.1	0.9		1643	3.0	0.9
	2249	0.8	0.2		2304	0.4	0.1
12	0448	2.7	0.8	27	0534	3.2	1.0
Su	1038	1.0	0.3	M	1137	1.0	0.3
	1650	3.0	0.9		1719	2.8	0.9
	2310	0.7	0.2		2336	0.4	0.1
13	0524	2.9	0.9	28	0615	3.3	1.0
M	1120	1.0	0.3	Tu	1225	1.1	0.3
	1719	3.0	0.9		1751	2.6	0.8
	2335	0.6	0.2				
14	0559	3.1	0.9	29	0005	0.4	0.1
Tu	1202	1.0	0.3	W	0655	3.3	1.0
	1747	2.8	0.9		1314	1.3	0.4
					1823	2.4	0.7
15	0002	0.5	0.2	30	0033	0.5	0.2
W	0638	3.2	1.0	Th	0737	3.3	1.0
	1245	1.1	0.3		1406	1.4	0.4
	1816	2.6	0.8		1851	2.1	0.6

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0100	0.6	0.2	16	0039	0.3	0.1
F	0819	3.2	1.0	Sa	0803	3.6	1.1
	1507	1.5	0.5		1446	1.3	0.4
	1916	1.9	0.6		1918	2.0	0.6
2	0129	0.8	0.2	17	0128	0.4	0.1
Sa	0907	3.1	0.9	Su	0859	3.6	1.1
	1624	1.6	0.5		1602	1.3	0.4
	1941	1.8	0.5		2023	1.8	0.5
3	0157	1.0	0.3	18	0222	0.6	0.2
Su	1000	2.9	0.9	M	1002	3.5	1.1
					1724	1.3	0.4
					2149	1.7	0.5
4	0232	1.1	0.3	19	0328	0.8	0.2
M	1106	2.9	0.9	Tu	1107	3.4	1.0
					1833	1.1	0.3
					2333	1.8	0.5
5	0325	1.3	0.4	20	0447	1.0	0.3
Tu	1206	2.8	0.9	W	1210	3.3	1.0
	2034	1.4	0.4		1929	0.9	0.3
6	0042	1.6	0.5	21	0108	2.0	0.6
W	0454	1.4	0.4	Th	0617	1.2	0.4
	1259	2.8	0.9		1309	3.2	1.0
	2044	1.3	0.4		2015	0.8	0.2
7	0156	1.8	0.5	22	0219	2.3	0.7
Th	0627	1.5	0.5	F	0739	1.2	0.4
	1339	2.8	0.9		1402	3.0	0.9
	2052	1.2	0.4		2053	0.6	0.2
8	0237	2.0	0.6	23	0312	2.6	0.8
F	0736	1.4	0.4	Sa	0849	1.3	0.4
	1415	2.8	0.9		1447	2.9	0.9
	2107	1.0	0.3		2126	0.5	0.2
9	0313	2.3	0.7	24	0401	2.9	0.9
Sa	0836	1.4	0.4	Su	0951	1.3	0.4
	1447	2.8	0.9		1527	2.7	0.8
	2127	0.8	0.2		2158	0.4	0.1
10	0348	2.6	0.8	25	0443	3.1	0.9
Su	0924	1.3	0.4	M	1046	1.3	0.4
	1519	2.8	0.9		1604	2.5	0.8
	2153	0.6	0.2		2228	0.4	0.1
11	0420	2.9	0.9	26	0525	3.3	1.0
M	1014	1.2	0.4	Tu	1140	1.3	0.4
	1554	2.7	0.8		1641	2.3	0.7
	2218	0.4	0.1		2300	0.3	0.1
12	0501	3.1	0.9	27	0604	3.4	1.0
Tu	1103	1.2	0.4	W	1233	1.4	0.4
	1629	2.6	0.8		1715	2.2	0.7
	2249	0.3	0.1		2327	0.4	0.1
13	0540	3.4	1.0	28	0645	3.4	1.0
W	1152	1.2	0.4	Th	1321	1.4	0.4
	1705	2.5	0.8		1750	2.0	0.6
	2322	0.2	0.1		2359	0.5	0.2
14	0622	3.5	1.1	29	0725	3.3	1.0
Th	1245	1.2	0.4	F	1417	1.4	0.4
	1745	2.4	0.7		1822	1.9	0.6
15	0001	0.2	0.1	30	0031	0.6	0.2
F	0710	3.6	1.1	Sa	0805	3.3	1.0
	1342	1.3	0.4		1515	1.5	0.5
	1829	2.2	0.7		1854	1.7	0.5
				31	0100	0.7	0.2
				Su	0846	3.2	1.0
					1615	1.5	0.5
					1933	1.6	0.5

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0132	0.9	0.3	16	0221	0.5	0.2
M	0931	3.1	0.9	Tu	0941	3.6	1.1
	1725	1.4	0.4		1649	0.9	0.3
	2025	1.5	0.5		2155	1.8	0.5
2	0209	1.0	0.3	17	0323	0.7	0.2
Tu	1013	3.0	0.9	W	1038	3.4	1.0
	1817	1.4	0.4		1748	0.8	0.2
	2148	1.5	0.5		2322	1.9	0.6
3	0253	1.2	0.4	18	0436	1.0	0.3
W	1057	2.9	0.9	Th	1131	3.2	1.0
	1849	1.3	0.4		1841	0.7	0.2
	2326	1.6	0.5				
4	0351	1.3	0.4	19	0045	2.1	0.6
Th	1136	2.8	0.9	F	0558	1.2	0.4
	1914	1.2	0.4		1227	2.9	0.9
					1927	0.6	0.2
5	0049	1.7	0.5	20	0158	2.4	0.7
F	0508	1.5	0.5	Sa	0722	1.4	0.4
	1215	2.7	0.8		1316	2.7	0.8
	1935	1.0	0.3		2010	0.5	0.2
6	0146	2.0	0.6	21	0300	2.6	0.8
Sa	0633	1.5	0.5	Su	0844	1.5	0.5
	1252	2.6	0.8		1405	2.4	0.7
	1957	0.9	0.3		2047	0.4	0.1
7	0230	2.3	0.7	22	0353	2.9	0.9
Su	0746	1.5	0.5	M	0957	1.5	0.5
	1334	2.6	0.8		1450	2.2	0.7
	2025	0.6	0.2		2126	0.4	0.1
8	0312	2.6	0.8	23	0437	3.1	0.9
M	0853	1.5	0.5	Tu	1100	1.4	0.4
	1416	2.5	0.8		1535	2.1	0.6
	2057	0.4	0.1		2158	0.4	0.1
9	0357	3.0	0.9	24	0520	3.2	1.0
Tu	0953	1.4	0.4	W	1153	1.4	0.4
	1458	2.4	0.7		1617	1.9	0.6
	2134	0.2	0.1		2233	0.4	0.1
10	0439	3.3	1.0	25	0559	3.3	1.0
W	1052	1.4	0.4	Th	1244	1.4	0.4
	1550	2.3	0.7		1656	1.9	0.6
	2214	0.1	0.0		2306	0.4	0.1
11	0525	3.5	1.1	26	0634	3.3	1.0
Th	1149	1.3	0.4	F	1327	1.3	0.4
	1639	2.2	0.7		1735	1.8	0.5
	2258	0.0	0.0		2340	0.4	0.1
12	0614	3.7	1.1	27	0712	3.3	1.0
F	1246	1.2	0.4	Sa	1409	1.3	0.4
	1729	2.1	0.6		1813	1.7	0.5
	2344	0.0	0.0				
13	0703	3.8	1.2	28	0012	0.5	0.2
Sa	1345	1.1	0.3	Su	0748	3.3	1.0
	1824	2.0	0.6		1448	1.3	0.4
					1852	1.7	0.5
14	0033	0.1	0.0	29	0047	0.6	0.2
Su	0755	3.8	1.2	M	0819	3.2	1.0
	1446	1.1	0.3		1530	1.3	0.4
	1926	1.9	0.6		1931	1.6	0.5
15	0125	0.2	0.1	30	0119	0.7	0.2
M	0848	3.7	1.1	Tu	0854	3.1	0.9
	1549	1.0	0.3		1608	1.3	0.4
	2035	1.9	0.6		2022	1.6	0.5

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0149	0.9	0.3	16	0314	0.7	0.2
W	0923	3.0	0.9	Th	1000	3.2	1.0
	1640	1.2	0.4		1655	0.6	0.2
	2112	1.6	0.5		2253	2.1	0.6
2	0230	1.0	0.3	17	0420	1.0	0.3
Th	0954	2.8	0.9	F	1049	2.8	0.9
	1709	1.1	0.3		1745	0.6	0.2
	2217	1.7	0.5				
3	0312	1.2	0.4	18	0013	2.2	0.7
F	1023	2.7	0.8	Sa	0540	1.3	0.4
	1741	1.0	0.3		1139	2.5	0.8
	2334	1.8	0.5		1837	0.6	0.2
4	0414	1.4	0.4	19	0136	2.4	0.7
Sa	1054	2.6	0.8	Su	0717	1.5	0.5
	1809	0.9	0.3		1231	2.2	0.7
					1927	0.5	0.2
5	0042	2.0	0.6	20	0245	2.6	0.8
Su	0537	1.6	0.5	M	0857	1.5	0.5
	1136	2.4	0.7		1332	2.0	0.6
	1845	0.7	0.2		2012	0.5	0.2
6	0151	2.3	0.7	21	0343	2.8	0.9
M	0708	1.6	0.5	Tu	1019	1.5	0.5
	1224	2.3	0.7		1428	1.8	0.5
	1925	0.5	0.2		2057	0.5	0.2
7	0243	2.6	0.8	22	0429	3.0	0.9
Tu	0836	1.6	0.5	W	1115	1.4	0.4
	1320	2.2	0.7		1523	1.8	0.5
	2012	0.3	0.1		2142	0.4	0.1
8	0335	3.0	0.9	23	0508	3.1	0.9
W	0950	1.5	0.5	Th	1157	1.3	0.4
	1422	2.1	0.6		1609	1.7	0.5
	2102	0.1	0.0		2219	0.4	0.1
9	0424	3.3	1.0	24	0543	3.2	1.0
Th	1053	1.3	0.4	F	1233	1.2	0.4
	1526	2.1	0.6		1651	1.7	0.5
	2154	0.0	0.0		2256	0.4	0.1
10	0513	3.5	1.1	25	0615	3.2	1.0
F	1149	1.2	0.4	Sa	1301	1.2	0.4
	1627	2.1	0.6		1731	1.8	0.5
	2244	-0.1	0.0		2328	0.4	0.1
11	0601	3.7	1.1	26	0647	3.2	1.0
Sa	1239	1.0	0.3	Su	1333	1.1	0.3
	1726	2.1	0.6		1809	1.8	0.5
	2336	-0.1	0.0				
12	0649	3.8	1.2	27	0003	0.4	0.1
Su	1330	0.9	0.3	M	0715	3.2	1.0
	1826	2.1	0.6		1402	1.1	0.3
					1844	1.8	0.5
13	0027	-0.1	0.0	28	0035	0.5	0.2
M	0739	3.8	1.2	Tu	0744	3.1	0.9
	1422	0.8	0.2		1427	1.1	0.3
	1925	2.1	0.6		1921	1.8	0.5
14	0120	0.1	0.0	29	0107	0.6	0.2
Tu	0825	3.7	1.1	W	0809	3.0	0.9
	1511	0.7	0.2		1454	1.0	0.3
	2029	2.1	0.6		1958	1.8	0.5
15	0216	0.4	0.1	30	0139	0.8	0.2
W	0912	3.5	1.1	Th	0835	2.8	0.9
	1603	0.7	0.2		1520	1.0	0.3
	2138	2.1	0.6		2042	1.9	0.6
				31	0211	0.9	0.3
				F	0857	2.7	0.8
					1544	0.9	0.3
					2131	1.9	0.6

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0253	1.2	0.4	16	0530	1.4	0.4
Sa	0919	2.5	0.8	Su	1048	2.0	0.6
	1613	0.8	0.2		1739	0.6	0.2
	2232	2.0	0.6				
2	0345	1.4	0.4	17	0107	2.4	0.7
Su	0947	2.3	0.7	M	0733	1.5	0.5
	1649	0.7	0.2		1147	1.8	0.5
	2349	2.1	0.6		1840	0.7	0.2
3	0506	1.6	0.5	18	0226	2.5	0.8
M	1024	2.1	0.6	Tu	0926	1.4	0.4
	1737	0.6	0.2		1314	1.6	0.5
					1942	0.7	0.2
4	0112	2.3	0.7	19	0326	2.7	0.8
Tu	0658	1.7	0.5	W	1028	1.3	0.4
	1120	2.0	0.6		1436	1.6	0.5
	1838	0.5	0.2		2038	0.6	0.2
5	0221	2.6	0.8	20	0409	2.8	0.9
W	0843	1.6	0.5	Th	1107	1.2	0.4
	1248	1.9	0.6		1529	1.6	0.5
	1944	0.3	0.1		2124	0.5	0.2
6	0321	2.9	0.9	21	0444	2.9	0.9
Th	0956	1.4	0.4	F	1132	1.1	0.3
	1415	1.9	0.6		1611	1.7	0.5
	2045	0.2	0.1		2206	0.5	0.2
7	0412	3.2	1.0	22	0515	3.0	0.9
F	1048	1.1	0.3	Sa	1154	1.0	0.3
	1527	1.9	0.6		1648	1.8	0.5
	2145	0.0	0.0		2241	0.4	0.1
8	0500	3.5	1.1	23	0544	3.0	0.9
Sa	1133	0.9	0.3	Su	1219	0.9	0.3
	1630	2.0	0.6		1720	1.9	0.6
	2238	-0.1	0.0		2313	0.4	0.1
9	0544	3.6	1.1	24	0609	3.1	0.9
Su	1218	0.7	0.2	M	1240	0.9	0.3
	1728	2.2	0.7		1752	2.0	0.6
	2330	-0.2	-0.1		2348	0.4	0.1
10	0628	3.7	1.1	25	0634	3.0	0.9
M	1301	0.6	0.2	Tu	1305	0.8	0.2
	1822	2.3	0.7		1825	2.1	0.6
11	0020	-0.1	0.0	26	0018	0.4	0.1
Tu	0712	3.6	1.1	W	0659	2.9	0.9
	1343	0.5	0.2		1324	0.8	0.2
	1918	2.3	0.7		1859	2.1	0.6
12	0111	0.1	0.0	27	0049	0.6	0.2
W	0753	3.4	1.0	Th	0721	2.8	0.9
	1425	0.4	0.1		1346	0.7	0.2
	2012	2.4	0.7		1934	2.2	0.7
13	0203	0.4	0.1	28	0124	0.7	0.2
Th	0836	3.1	0.9	F	0743	2.6	0.8
	1510	0.4	0.1		1409	0.7	0.2
	2112	2.3	0.7		2013	2.2	0.7
14	0259	0.7	0.2	29	0159	0.9	0.3
F	0918	2.7	0.8	Sa	0804	2.4	0.7
	1556	0.5	0.2		1432	0.6	0.2
	2218	2.3	0.7		2055	2.2	0.7
15	0404	1.1	0.3	30	0242	1.2	0.4
Sa	0959	2.4	0.7	Su	0826	2.2	0.7
	1644	0.6	0.2		1501	0.6	0.2
	2337	2.3	0.7		2157	2.2	0.7
				31	0340	1.4	0.4
				M	0851	2.0	0.6
					1543	0.6	0.2
					2313	2.3	0.7

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0518	1.6	0.5	16	0153	2.5	0.8
Tu	0928	1.8	0.5	W	0937	1.2	0.4
	1643	0.6	0.2		1333	1.4	0.4
					1904	0.9	0.3
2	0043	2.4	0.7	17	0252	2.6	0.8
W	0742	1.5	0.5	Th	1009	1.1	0.3
	1053	1.6	0.5		1447	1.5	0.5
	1804	0.5	0.2		2013	0.8	0.2
3	0205	2.7	0.8	18	0333	2.7	0.8
Th	0905	1.3	0.4	F	1030	1.0	0.3
	1259	1.6	0.5		1529	1.6	0.5
	1928	0.4	0.1		2105	0.7	0.2
4	0304	2.9	0.9	19	0406	2.8	0.9
F	0953	1.1	0.3	Sa	1049	0.9	0.3
	1432	1.7	0.5		1604	1.8	0.5
	2041	0.2	0.1		2143	0.6	0.2
5	0353	3.2	1.0	20	0433	2.8	0.9
Sa	1032	0.8	0.2	Su	1107	0.8	0.2
	1537	1.9	0.6		1631	1.9	0.6
	2140	0.1	0.0		2219	0.5	0.2
6	0438	3.3	1.0	21	0459	2.8	0.9
Su	1108	0.6	0.2	M	1126	0.7	0.2
	1633	2.2	0.7		1703	2.1	0.6
	2233	0.0	0.0		2251	0.5	0.2
7	0518	3.4	1.0	22	0523	2.8	0.9
M	1146	0.4	0.1	Tu	1147	0.6	0.2
	1723	2.4	0.7		1732	2.2	0.7
	2324	0.0	0.0		2326	0.5	0.2
8	0600	3.4	1.0	23	0548	2.8	0.9
Tu	1222	0.3	0.1	W	1206	0.5	0.2
	1812	2.6	0.8		1804	2.4	0.7
					2359	0.5	0.2
9	0013	0.1	0.0	24	0611	2.6	0.8
W	0639	3.2	1.0	Th	1228	0.4	0.1
	1300	0.2	0.1		1837	2.5	0.8
	1902	2.6	0.8				
10	0102	0.3	0.1	25	0036	0.7	0.2
Th	0716	2.9	0.9	F	0635	2.5	0.8
	1339	0.2	0.1		1248	0.4	0.1
	1951	2.7	0.8		1912	2.5	0.8
11	0153	0.6	0.2	26	0115	0.8	0.2
F	0754	2.6	0.8	Sa	0657	2.3	0.7
	1417	0.3	0.1		1313	0.4	0.1
	2043	2.6	0.8		1951	2.6	0.8
12	0246	0.9	0.3	27	0157	1.0	0.3
Sa	0832	2.3	0.7	Su	0719	2.1	0.6
	1454	0.4	0.1		1337	0.4	0.1
	2145	2.5	0.8		2040	2.6	0.8
13	0357	1.2	0.4	28	0251	1.2	0.4
Su	0907	1.9	0.6	M	0740	1.9	0.6
	1536	0.6	0.2		1414	0.4	0.1
	2258	2.4	0.7		2139	2.5	0.8
14	0541	1.4	0.4	29	0410	1.4	0.4
M	0952	1.6	0.5	Tu	0812	1.7	0.5
	1628	0.7	0.2		1502	0.5	0.2
					2258	2.5	0.8
15	0028	2.4	0.7	30	0624	1.4	0.4
Tu	0815	1.3	0.4	W	0911	1.5	0.5
	1118	1.4	0.4		1612	0.6	0.2
	1741	0.8	0.2				

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

CALLAO, PERU, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0027	2.6	0.8	16	0159	2.5	0.8
Th	0811	1.2	0.4	F	0927	0.9	0.3
	1135	1.4	0.4		1437	1.4	0.4
	1750	0.6	0.2		1930	1.0	0.3
2	0143	2.8	0.9	17	0237	2.6	0.8
F	0858	1.0	0.3	Sa	0942	0.8	0.2
	1335	1.5	0.5		1513	1.6	0.5
	1923	0.5	0.2		2026	0.9	0.3
3	0239	2.9	0.9	18	0309	2.6	0.8
Sa	0930	0.8	0.2	Su	0957	0.7	0.2
	1448	1.8	0.5		1542	1.9	0.6
	2033	0.4	0.1		2111	0.8	0.2
4	0326	3.1	0.9	19	0337	2.6	0.8
Su	1005	0.5	0.2	M	1012	0.6	0.2
	1542	2.1	0.6		1607	2.1	0.6
	2132	0.3	0.1		2150	0.7	0.2
5	0408	3.1	0.9	20	0403	2.6	0.8
M	1038	0.3	0.1	Tu	1030	0.4	0.1
	1630	2.4	0.7		1639	2.3	0.7
	2227	0.2	0.1		2225	0.7	0.2
6	0447	3.1	0.9	21	0430	2.6	0.8
Tu	1111	0.1	0.0	W	1051	0.3	0.1
	1716	2.7	0.8		1710	2.5	0.8
	2316	0.3	0.1		2304	0.7	0.2
7	0526	2.9	0.9	22	0456	2.5	0.8
W	1145	0.0	0.0	Th	1114	0.2	0.1
	1801	2.8	0.9		1743	2.7	0.8
					2345	0.7	0.2
8	0005	0.4	0.1	23	0524	2.4	0.7
Th	0603	2.7	0.8	F	1138	0.1	0.0
	1218	0.0	0.0		1818	2.9	0.9
	1847	2.9	0.9				
9	0053	0.6	0.2	24	0026	0.8	0.2
F	0638	2.4	0.7	Sa	0550	2.2	0.7
	1251	0.1	0.0		1205	0.1	0.0
	1934	2.9	0.9		1857	2.9	0.9
10	0147	0.8	0.2	25	0114	1.0	0.3
Sa	0710	2.1	0.6	Su	0618	2.0	0.6
	1324	0.2	0.1		1236	0.1	0.0
	2021	2.8	0.9		1942	2.9	0.9
11	0246	1.0	0.3	26	0209	1.1	0.3
Su	0742	1.8	0.5	M	0651	1.8	0.5
	1358	0.4	0.1		1309	0.2	0.1
	2117	2.7	0.8		2033	2.9	0.9
12	0403	1.2	0.4	27	0317	1.2	0.4
M	0816	1.6	0.5	Tu	0728	1.6	0.5
	1433	0.6	0.2		1348	0.3	0.1
	2222	2.6	0.8		2133	2.9	0.9
13	0613	1.2	0.4	28	0450	1.2	0.4
Tu	0854	1.3	0.4	W	0822	1.4	0.4
	1515	0.8	0.2		1443	0.5	0.2
	2341	2.5	0.8		2248	2.8	0.9
14	0836	1.1	0.3	29	0633	1.1	0.3
W	1103	1.2	0.4	Th	1008	1.3	0.4
	1624	0.9	0.3		1602	0.6	0.2
15	0058	2.5	0.8	30	0005	2.8	0.9
Th	0912	1.0	0.3	F	0741	0.9	0.3
	1339	1.3	0.4		1224	1.4	0.4
	1811	1.0	0.3		1742	0.7	0.2
				31	0109	2.9	0.9
				Sa	0823	0.7	0.2
					1351	1.7	0.5
					1911	0.7	0.2

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0205	2.9	0.9	16	0200	2.5	0.8
Su	0858	0.5	0.2	M	0857	0.6	0.2
	1451	2.0	0.6		1511	1.9	0.6
	2024	0.7	0.2		2026	1.1	0.3
2	0252	2.9	0.9	17	0231	2.4	0.7
M	0931	0.3	0.1	Tu	0914	0.5	0.2
	1540	2.3	0.7		1540	2.2	0.7
	2126	0.6	0.2		2114	1.1	0.3
3	0334	2.8	0.9	18	0302	2.4	0.7
Tu	1003	0.1	0.0	W	0937	0.3	0.1
	1627	2.7	0.8		1612	2.5	0.8
	2219	0.6	0.2		2203	1.0	0.3
4	0413	2.7	0.8	19	0334	2.3	0.7
W	1037	0.0	0.0	Th	1001	0.2	0.1
	1711	2.9	0.9		1649	2.8	0.9
	2313	0.7	0.2		2249	1.0	0.3
5	0449	2.5	0.8	20	0406	2.2	0.7
Th	1109	-0.1	0.0	F	1030	0.0	0.0
	1752	3.1	0.9		1724	3.0	0.9
					2335	1.0	0.3
6	0004	0.8	0.2	21	0442	2.1	0.6
F	0527	2.3	0.7	Sa	1102	-0.1	0.0
	1141	-0.1	0.0		1805	3.2	1.0
	1835	3.1	0.9				
7	0057	0.9	0.3	22	0026	1.0	0.3
Sa	0559	2.0	0.6	Su	0520	2.0	0.6
	1213	0.0	0.0		1134	-0.1	0.0
	1920	3.1	0.9		1848	3.3	1.0
8	0152	1.0	0.3	23	0120	1.0	0.3
Su	0635	1.8	0.5	M	0559	1.9	0.6
	1244	0.2	0.1		1214	-0.1	0.0
	2006	3.0	0.9		1936	3.3	1.0
9	0254	1.1	0.3	24	0219	1.1	0.3
M	0707	1.6	0.5	Tu	0645	1.7	0.5
	1314	0.4	0.1		1257	0.1	0.0
	2054	2.9	0.9		2029	3.3	1.0
10	0416	1.2	0.4	25	0328	1.1	0.3
Tu	0745	1.4	0.4	W	0740	1.6	0.5
	1347	0.6	0.2		1345	0.2	0.1
	2147	2.7	0.8		2125	3.2	1.0
11	0601	1.1	0.3	26	0441	1.0	0.3
W	0827	1.2	0.4	Th	0856	1.4	0.4
	1422	0.8	0.2		1445	0.4	0.1
	2250	2.6	0.8		2227	3.1	0.9
12	0730	1.1	0.3	27	0553	0.9	0.3
Th	1026	1.2	0.4	F	1039	1.4	0.4
	1518	1.0	0.3		1600	0.7	0.2
	2350	2.5	0.8		2331	3.0	0.9
13	0809	1.0	0.3	28	0651	0.7	0.2
F	1249	1.2	0.4	Sa	1221	1.6	0.5
	1641	1.1	0.3		1727	0.9	0.3
14	0042	2.5	0.8	29	0029	2.9	0.9
Sa	0826	0.9	0.3	Su	0738	0.5	0.2
	1359	1.4	0.4		1343	1.9	0.6
	1817	1.2	0.4		1856	1.0	0.3
15	0125	2.5	0.8	30	0125	2.8	0.9
Su	0842	0.8	0.2	M	0820	0.4	0.1
	1439	1.7	0.5		1445	2.3	0.7
	1927	1.2	0.4		2015	1.0	0.3

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0214	2.6	0.8	16	0114	2.3	0.7
Tu	0855	0.2	0.1	W	0812	0.5	0.2
	1535	2.6	0.8		1508	2.3	0.7
	2124	1.1	0.3		2043	1.4	0.4
2	0259	2.4	0.7	17	0156	2.2	0.7
W	0930	0.1	0.0	Th	0842	0.3	0.1
	1623	2.9	0.9		1548	2.7	0.8
	2226	1.0	0.3		2143	1.4	0.4
3	0341	2.3	0.7	18	0239	2.1	0.6
Th	1006	0.0	0.0	F	0916	0.2	0.1
	1705	3.1	0.9		1629	3.0	0.9
	2321	1.0	0.3		2239	1.3	0.4
4	0420	2.1	0.6	19	0324	2.1	0.6
F	1040	0.0	0.0	Sa	0956	0.0	0.0
	1748	3.2	1.0		1711	3.2	1.0
					2334	1.2	0.4
5	0015	1.1	0.3	20	0414	2.0	0.6
Sa	0458	1.9	0.6	Su	1038	-0.1	0.0
	1114	0.0	0.0		1754	3.4	1.0
	1830	3.3	1.0				
6	0108	1.1	0.3	21	0026	1.1	0.3
Su	0537	1.8	0.5	M	0505	2.0	0.6
	1146	0.1	0.0		1121	-0.1	0.0
	1912	3.2	1.0		1839	3.6	1.1
7	0158	1.1	0.3	22	0118	1.0	0.3
M	0612	1.6	0.5	Tu	0557	1.9	0.6
	1221	0.2	0.1		1209	-0.1	0.0
	1953	3.2	1.0		1928	3.6	1.1
8	0253	1.2	0.4	23	0211	1.0	0.3
Tu	0651	1.5	0.5	W	0653	1.8	0.5
	1253	0.4	0.1		1255	0.0	0.0
	2033	3.1	0.9		2017	3.6	1.1
9	0352	1.2	0.4	24	0309	0.9	0.3
W	0733	1.4	0.4	Th	0757	1.8	0.5
	1326	0.6	0.2		1347	0.2	0.1
	2115	2.9	0.9		2107	3.5	1.1
10	0451	1.2	0.4	25	0405	0.8	0.2
Th	0824	1.4	0.4	F	0907	1.8	0.5
	1400	0.7	0.2		1443	0.5	0.2
	2155	2.8	0.9		2200	3.3	1.0
11	0543	1.1	0.3	26	0501	0.7	0.2
F	0938	1.3	0.4	Sa	1029	1.8	0.5
	1440	0.9	0.3		1552	0.8	0.2
	2237	2.7	0.8		2250	3.0	0.9
12	0627	1.1	0.3	27	0559	0.6	0.2
Sa	1109	1.4	0.4	Su	1155	1.9	0.6
	1531	1.1	0.3		1711	1.1	0.3
	2313	2.6	0.8		2343	2.8	0.9
13	0657	1.0	0.3	28	0649	0.5	0.2
Su	1243	1.5	0.5	M	1321	2.2	0.7
	1641	1.3	0.4		1841	1.3	0.4
	2353	2.5	0.8				
14	0722	0.9	0.3	29	0042	2.5	0.8
M	1343	1.7	0.5	Tu	0738	0.4	0.1
	1808	1.4	0.4		1431	2.5	0.8
					2015	1.4	0.4
15	0032	2.4	0.7	30	0135	2.3	0.7
Tu	0743	0.7	0.2	W	0823	0.3	0.1
	1429	2.0	0.6		1529	2.8	0.9
	1933	1.5	0.5		2137	1.4	0.4
				31	0228	2.1	0.6
				Th	0903	0.3	0.1
					1620	3.0	0.9
					2244	1.3	0.4

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0417	5.2	1.6	16	0438	4.4	1.3
Th	1040	-0.9	-0.3	F	1053	0.0	0.0
	1710	5.8	1.8		1724	5.2	1.6
	2318	0.4	0.1		2330	1.1	0.3
2	0509	5.2	1.6	17	0513	4.5	1.4
F	1129	-0.9	-0.3	Sa	1125	0.1	0.0
	1759	5.9	1.8		1755	5.2	1.6
3	0008	0.3	0.1	18	0001	1.0	0.3
Sa	0600	5.1	1.6	Su	0547	4.5	1.4
	1216	-0.7	-0.2		1157	0.2	0.1
	1848	5.8	1.8		1824	5.2	1.6
4	0059	0.4	0.1	19	0034	0.9	0.3
Su	0653	4.9	1.5	M	0622	4.4	1.3
	1305	-0.3	-0.1		1229	0.3	0.1
	1936	5.5	1.7		1856	5.1	1.6
5	0152	0.5	0.2	20	0109	0.9	0.3
M	0748	4.6	1.4	Tu	0659	4.3	1.3
	1357	0.2	0.1		1304	0.5	0.2
	2024	5.2	1.6		1928	5.0	1.5
6	0247	0.6	0.2	21	0145	0.9	0.3
Tu	0844	4.3	1.3	W	0741	4.2	1.3
	1447	0.7	0.2		1340	0.8	0.2
	2114	4.9	1.5		2005	4.9	1.5
7	0343	0.8	0.2	22	0227	0.9	0.3
W	0949	4.0	1.2	Th	0829	4.1	1.2
	1545	1.2	0.4		1424	1.1	0.3
	2207	4.6	1.4		2047	4.7	1.4
8	0444	0.9	0.3	23	0319	0.9	0.3
Th	1101	3.8	1.2	F	0930	3.9	1.2
	1648	1.6	0.5		1522	1.4	0.4
	2306	4.3	1.3		2140	4.5	1.4
9	0548	0.9	0.3	24	0423	0.9	0.3
F	1215	3.8	1.2	Sa	1047	3.9	1.2
	1802	1.8	0.5		1636	1.7	0.5
					2246	4.4	1.3
10	0005	4.1	1.2	25	0533	0.8	0.2
Sa	0649	0.8	0.2	Su	1210	4.1	1.2
	1326	3.9	1.2		1802	1.8	0.5
	1911	1.9	0.6				
11	0102	4.1	1.2	26	0004	4.4	1.3
Su	0743	0.7	0.2	M	0647	0.5	0.2
	1422	4.1	1.2		1326	4.5	1.4
	2011	1.8	0.5		1924	1.6	0.5
12	0156	4.1	1.2	27	0118	4.5	1.4
M	0830	0.5	0.2	Tu	0753	0.1	0.0
	1507	4.4	1.3		1431	4.9	1.5
	2059	1.7	0.5		2032	1.2	0.4
13	0240	4.2	1.3	28	0223	4.8	1.5
Tu	0910	0.3	0.1	W	0851	-0.3	-0.1
	1545	4.6	1.4		1525	5.4	1.6
	2144	1.5	0.5		2128	0.8	0.2
14	0324	4.3	1.3	29	0320	5.1	1.6
W	0947	0.2	0.1	Th	0941	-0.6	-0.2
	1621	4.9	1.5		1612	5.8	1.8
	2221	1.3	0.4		2219	0.4	0.1
15	0401	4.4	1.3	30	0414	5.4	1.6
Th	1021	0.1	0.0	F	1030	-0.8	-0.2
	1653	5.0	1.5		1657	6.1	1.9
	2256	1.2	0.4		2306	0.2	0.1
				31	0500	5.5	1.7
				Sa	1115	-0.8	-0.2
					1741	6.1	1.9
					2350	0.0	0.0

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0547	5.4	1.6	16	0528	4.9	1.5
Su	1158	-0.6	-0.2	M	1134	0.1	0.0
	1822	6.0	1.8		1753	5.5	1.7
2	0034	0.1	0.0	17	0003	0.5	0.2
M	0634	5.2	1.6	Tu	0600	4.9	1.5
	1242	-0.2	-0.1		1205	0.2	0.1
	1903	5.7	1.7		1821	5.4	1.6
3	0119	0.2	0.1	18	0034	0.4	0.1
Tu	0719	4.9	1.5	W	0635	4.8	1.5
	1323	0.3	0.1		1237	0.5	0.2
	1941	5.4	1.6		1853	5.3	1.6
4	0202	0.5	0.2	19	0109	0.5	0.2
W	0808	4.5	1.4	Th	0715	4.7	1.4
	1407	0.8	0.2		1315	0.8	0.2
	2023	4.9	1.5		1927	5.0	1.5
5	0251	0.8	0.2	20	0148	0.6	0.2
Th	0900	4.1	1.2	F	0800	4.4	1.3
	1453	1.4	0.4		1357	1.2	0.4
	2109	4.5	1.4		2008	4.7	1.4
6	0345	1.1	0.3	21	0239	0.8	0.2
F	1005	3.8	1.2	Sa	0901	4.2	1.3
	1551	1.9	0.6		1453	1.6	0.5
	2200	4.1	1.2		2101	4.4	1.3
7	0452	1.3	0.4	22	0345	0.9	0.3
Sa	1133	3.6	1.1	Su	1021	4.0	1.2
	1714	2.3	0.7		1615	1.9	0.6
	2313	3.8	1.2		2217	4.1	1.2
8	0606	1.3	0.4	23	0509	0.9	0.3
Su	1302	3.7	1.1	M	1158	4.1	1.2
	1849	2.3	0.7		1759	2.0	0.6
					2354	4.1	1.2
9	0033	3.7	1.1	24	0636	0.7	0.2
M	0718	1.2	0.4	Tu	1321	4.5	1.4
	1406	4.0	1.2		1926	1.6	0.5
	2003	2.1	0.6				
10	0142	3.8	1.2	25	0116	4.4	1.3
Tu	0811	0.9	0.3	W	0745	0.3	0.1
	1451	4.4	1.3		1422	5.0	1.5
	2052	1.8	0.5		2028	1.1	0.3
11	0230	4.0	1.2	26	0222	4.8	1.5
W	0852	0.7	0.2	Th	0843	-0.1	0.0
	1528	4.7	1.4		1512	5.5	1.7
	2131	1.5	0.5		2120	0.6	0.2
12	0312	4.3	1.3	27	0317	5.2	1.6
Th	0928	0.4	0.1	F	0932	-0.4	-0.1
	1600	5.0	1.5		1555	5.9	1.8
	2204	1.2	0.4		2205	0.2	0.1
13	0349	4.5	1.4	28	0402	5.5	1.7
F	1003	0.2	0.1	Sa	1014	-0.6	-0.2
	1627	5.3	1.6		1635	6.1	1.9
	2235	0.9	0.3		2247	-0.1	0.0
14	0422	4.7	1.4				
Sa	1032	0.1	0.0				
	1656	5.4	1.6				
	2305	0.7	0.2				
15	0455	4.8	1.5				
Su	1103	0.0	0.0				
	1724	5.5	1.7				
	2333	0.5	0.2				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0446	5.6	1.7	16	0432	5.1	1.6
Su	1056	-0.5	-0.2	M	1034	0.1	0.0
	1714	6.1	1.9		1648	5.6	1.7
	2326	-0.2	-0.1		2300	0.1	0.0
2	0529	5.6	1.7	17	0505	5.2	1.6
M	1135	-0.3	-0.1	Tu	1106	0.1	0.0
	1749	6.0	1.8		1718	5.6	1.7
					2332	0.0	0.0
3	0003	-0.2	-0.1	18	0537	5.2	1.6
Tu	0609	5.4	1.6	W	1141	0.3	0.1
	1214	0.0	0.0		1747	5.5	1.7
	1826	5.7	1.7				
4	0040	0.0	0.0	19	0005	0.0	0.0
W	0649	5.1	1.6	Th	0614	5.1	1.6
	1251	0.5	0.2		1216	0.6	0.2
	1901	5.2	1.6		1822	5.3	1.6
5	0120	0.4	0.1	20	0040	0.1	0.0
Th	0731	4.7	1.4	F	0656	4.9	1.5
	1328	1.1	0.3		1256	0.9	0.3
	1936	4.8	1.5		1859	4.9	1.5
6	0200	0.7	0.2	21	0123	0.3	0.1
F	0817	4.2	1.3	Sa	0746	4.6	1.4
	1410	1.6	0.5		1344	1.3	0.4
	2013	4.3	1.3		1946	4.6	1.4
7	0247	1.1	0.3	22	0216	0.6	0.2
Sa	0916	3.8	1.2	Su	0850	4.3	1.3
	1503	2.1	0.6		1450	1.7	0.5
	2101	3.8	1.2		2045	4.2	1.3
8	0349	1.4	0.4	23	0327	0.9	0.3
Su	1045	3.6	1.1	M	1015	4.2	1.3
	1633	2.4	0.7		1623	2.0	0.6
	2217	3.5	1.1		2215	3.9	1.2
9	0517	1.6	0.5	24	0457	1.0	0.3
M	1225	3.7	1.1	Tu	1151	4.3	1.3
	1833	2.4	0.7		1804	1.8	0.5
	2359	3.4	1.0		2356	4.0	1.2
10	0639	1.5	0.5	25	0625	0.8	0.2
Tu	1337	4.0	1.2	W	1308	4.7	1.4
	1945	2.1	0.6		1921	1.3	0.4
11	0119	3.6	1.1	26	0116	4.3	1.3
W	0741	1.2	0.4	Th	0732	0.5	0.2
	1419	4.4	1.3		1403	5.1	1.6
	2027	1.7	0.5		2017	0.8	0.2
12	0211	3.9	1.2	27	0214	4.8	1.5
Th	0823	0.9	0.3	F	0825	0.1	0.0
	1454	4.7	1.4		1448	5.5	1.7
	2103	1.3	0.4		2102	0.3	0.1
13	0251	4.3	1.3	28	0304	5.2	1.6
F	0859	0.6	0.2	Sa	0913	-0.1	0.0
	1523	5.1	1.6		1529	5.7	1.7
	2135	0.9	0.3		2142	-0.1	0.0
14	0325	4.6	1.4	29	0347	5.5	1.7
Sa	0933	0.3	0.1	Su	0955	-0.2	-0.1
	1552	5.3	1.6		1605	5.9	1.8
	2201	0.6	0.2		2219	-0.3	-0.1
15	0400	4.9	1.5	30	0428	5.6	1.7
Su	1005	0.2	0.1	M	1033	-0.1	0.0
	1619	5.5	1.7		1642	5.8	1.8
	2229	0.3	0.1		2256	-0.4	-0.1
				31	0508	5.5	1.7
				Tu	1110	0.1	0.0
					1715	5.6	1.7
					2331	-0.3	-0.1

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0545	5.3	1.6	16	0521	5.4	1.6
W	1145	0.4	0.1	Th	1121	0.5	0.2
	1750	5.3	1.6		1721	5.3	1.6
					2339	-0.3	-0.1
2	0008	0.0	0.0	17	0603	5.3	1.6
Th	0624	5.0	1.5	F	1203	0.7	0.2
	1221	0.9	0.3		1801	5.1	1.6
	1822	4.9	1.5				
3	0042	0.3	0.1	18	0021	-0.2	-0.1
F	0701	4.7	1.4	Sa	0650	5.1	1.6
	1259	1.3	0.4		1251	1.0	0.3
	1854	4.5	1.4		1845	4.7	1.4
4	0119	0.7	0.2	19	0112	0.1	0.0
Sa	0746	4.3	1.3	Su	0744	4.8	1.5
	1339	1.8	0.5		1349	1.4	0.4
	1930	4.0	1.2		1939	4.3	1.3
5	0200	1.0	0.3	20	0208	0.5	0.2
Su	0842	3.9	1.2	M	0852	4.6	1.4
	1437	2.1	0.6		1503	1.6	0.5
	2018	3.6	1.1		2053	4.0	1.2
6	0258	1.4	0.4	21	0322	0.8	0.2
M	0959	3.7	1.1	Tu	1014	4.5	1.4
	1607	2.3	0.7		1633	1.6	0.5
	2135	3.3	1.0		2223	3.8	1.2
7	0420	1.6	0.5	22	0447	0.9	0.3
Tu	1130	3.8	1.2	W	1133	4.6	1.4
	1754	2.2	0.7		1759	1.4	0.4
	2324	3.2	1.0		2354	4.0	1.2
8	0546	1.6	0.5	23	0604	0.8	0.2
W	1239	4.0	1.2	Th	1239	4.8	1.5
	1902	1.9	0.6		1902	0.9	0.3
9	0044	3.5	1.1	24	0103	4.3	1.3
Th	0649	1.3	0.4	F	0710	0.6	0.2
	1326	4.3	1.3		1332	5.1	1.6
	1945	1.5	0.5		1953	0.5	0.2
10	0137	3.9	1.2	25	0158	4.7	1.4
F	0740	1.1	0.3	Sa	0803	0.4	0.1
	1403	4.7	1.4		1419	5.3	1.6
	2019	1.0	0.3		2036	0.1	0.0
11	0217	4.3	1.3	26	0248	5.0	1.5
Sa	0819	0.8	0.2	Su	0848	0.3	0.1
	1435	5.0	1.5		1457	5.4	1.6
	2051	0.6	0.2		2117	-0.2	-0.1
12	0254	4.6	1.4	27	0329	5.2	1.6
Su	0855	0.5	0.2	M	0931	0.3	0.1
	1507	5.2	1.6		1536	5.4	1.6
	2123	0.2	0.1		2153	-0.3	-0.1
13	0328	5.0	1.5	28	0408	5.3	1.6
M	0930	0.4	0.1	Tu	1008	0.4	0.1
	1539	5.4	1.6		1610	5.3	1.6
	2155	-0.1	0.0		2229	-0.3	-0.1
14	0404	5.2	1.6	29	0448	5.2	1.6
Tu	1005	0.3	0.1	W	1045	0.6	0.2
	1611	5.5	1.7		1643	5.1	1.6
	2227	-0.3	-0.1		2303	-0.2	-0.1
15	0441	5.4	1.6	30	0526	5.1	1.6
W	1041	0.3	0.1	Th	1122	0.9	0.3
	1644	5.5	1.7		1715	4.9	1.5
	2303	-0.4	-0.1		2336	0.0	0.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0603	4.9	1.5	16	0553	5.4	1.6
F	1201	1.2	0.4	Sa	1158	0.8	0.2
	1750	4.6	1.4		1749	4.9	1.5
2	0011	0.3	0.1	17	0011	-0.4	-0.1
Sa	0643	4.6	1.4	Su	0648	5.3	1.6
	1240	1.5	0.5		1253	1.0	0.3
	1826	4.2	1.3		1843	4.6	1.4
3	0048	0.6	0.2	18	0106	-0.1	0.0
Su	0725	4.4	1.3	M	0744	5.1	1.6
	1325	1.8	0.5		1356	1.2	0.4
	1904	3.8	1.2		1944	4.3	1.3
4	0131	0.9	0.3	19	0205	0.3	0.1
M	0818	4.2	1.3	Tu	0847	4.9	1.5
	1424	2.0	0.6		1505	1.2	0.4
	1957	3.5	1.1		2055	4.0	1.2
5	0221	1.2	0.4	20	0314	0.6	0.2
Tu	0919	4.0	1.2	W	0956	4.8	1.5
	1538	2.1	0.6		1621	1.2	0.4
	2105	3.3	1.0		2216	4.0	1.2
6	0327	1.4	0.4	21	0426	0.8	0.2
W	1024	4.0	1.2	Th	1102	4.8	1.5
	1655	1.9	0.6		1730	1.0	0.3
	2231	3.2	1.0		2333	4.1	1.2
7	0438	1.5	0.5	22	0535	0.9	0.3
Th	1126	4.1	1.2	F	1202	4.9	1.5
	1800	1.7	0.5		1833	0.7	0.2
	2348	3.4	1.0				
8	0544	1.4	0.4	23	0041	4.3	1.3
F	1217	4.3	1.3	Sa	0641	0.9	0.3
	1849	1.3	0.4		1257	4.9	1.5
					1924	0.4	0.1
9	0047	3.8	1.2	24	0137	4.5	1.4
Sa	0641	1.2	0.4	Su	0734	0.9	0.3
	1302	4.6	1.4		1342	5.0	1.5
	1929	0.9	0.3		2009	0.1	0.0
10	0134	4.1	1.2	25	0228	4.7	1.4
Su	0729	1.0	0.3	M	0822	0.9	0.3
	1342	4.8	1.5		1425	5.0	1.5
	2006	0.4	0.1		2051	0.0	0.0
11	0215	4.5	1.4	26	0313	4.9	1.5
M	0811	0.8	0.2	Tu	0907	0.9	0.3
	1419	5.0	1.5		1504	4.9	1.5
	2042	0.0	0.0		2128	-0.1	0.0
12	0256	4.9	1.5	27	0353	4.9	1.5
Tu	0854	0.7	0.2	W	0947	1.0	0.3
	1457	5.2	1.6		1542	4.8	1.5
	2120	-0.3	-0.1		2205	-0.1	0.0
13	0339	5.2	1.6	28	0432	4.9	1.5
W	0936	0.6	0.2	Th	1029	1.1	0.3
	1536	5.3	1.6		1617	4.7	1.4
	2158	-0.5	-0.2		2240	-0.1	0.0
14	0422	5.4	1.6	29	0511	4.9	1.5
Th	1021	0.6	0.2	F	1108	1.2	0.4
	1617	5.3	1.6		1652	4.5	1.4
	2240	-0.6	-0.2		2315	0.0	0.0
15	0506	5.5	1.7	30	0549	4.8	1.5
F	1107	0.6	0.2	Sa	1147	1.4	0.4
	1702	5.1	1.6		1729	4.3	1.3
	2324	-0.5	-0.2		2352	0.2	0.1
				31	0629	4.7	1.4
				Su	1230	1.5	0.5
					1808	4.0	1.2

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0029	0.5	0.2	16	0059	-0.3	-0.1
M	0709	4.6	1.4	Tu	0733	5.4	1.6
	1315	1.6	0.5		1348	0.7	0.2
	1848	3.8	1.2		1939	4.5	1.4
2	0107	0.7	0.2	17	0154	0.0	0.0
Tu	0752	4.5	1.4	W	0829	5.3	1.6
	1404	1.7	0.5		1449	0.8	0.2
	1939	3.6	1.1		2042	4.3	1.3
3	0153	0.9	0.3	18	0253	0.4	0.1
W	0837	4.4	1.3	Th	0926	5.1	1.6
	1458	1.7	0.5		1551	0.8	0.2
	2034	3.5	1.1		2151	4.1	1.2
4	0241	1.1	0.3	19	0354	0.7	0.2
Th	0926	4.3	1.3	F	1023	4.9	1.5
	1555	1.6	0.5		1655	0.7	0.2
	2138	3.4	1.0		2303	4.0	1.2
5	0337	1.3	0.4	20	0459	1.0	0.3
F	1015	4.3	1.3	Sa	1120	4.7	1.4
	1650	1.4	0.4		1756	0.6	0.2
	2244	3.5	1.1				
6	0436	1.4	0.4	21	0013	4.1	1.2
Sa	1107	4.4	1.3	Su	0604	1.3	0.4
	1743	1.1	0.3		1217	4.6	1.4
	2349	3.7	1.1		1852	0.5	0.2
7	0538	1.4	0.4	22	0116	4.2	1.3
Su	1156	4.5	1.4	M	0705	1.4	0.4
	1831	0.8	0.2		1308	4.5	1.4
					1942	0.3	0.1
8	0047	4.0	1.2	23	0211	4.3	1.3
M	0636	1.3	0.4	Tu	0803	1.4	0.4
	1247	4.7	1.4		1355	4.5	1.4
	1918	0.4	0.1		2027	0.2	0.1
9	0140	4.4	1.3	24	0259	4.5	1.4
Tu	0732	1.1	0.3	W	0851	1.4	0.4
	1335	4.8	1.5		1441	4.4	1.3
	2003	0.0	0.0		2109	0.1	0.0
10	0231	4.8	1.5	25	0342	4.6	1.4
W	0825	1.0	0.3	Th	0937	1.4	0.4
	1422	5.0	1.5		1520	4.4	1.3
	2051	-0.3	-0.1		2149	0.1	0.0
11	0318	5.1	1.6	26	0423	4.8	1.5
Th	0917	0.8	0.2	F	1018	1.4	0.4
	1510	5.1	1.6		1602	4.4	1.3
	2136	-0.6	-0.2		2224	0.0	0.0
12	0408	5.4	1.6	27	0459	4.8	1.5
F	1008	0.7	0.2	Sa	1100	1.3	0.4
	1601	5.1	1.6		1640	4.3	1.3
	2226	-0.7	-0.2		2300	0.1	0.0
13	0459	5.5	1.7	28	0537	4.9	1.5
Sa	1101	0.7	0.2	Su	1139	1.3	0.4
	1651	5.1	1.6		1719	4.2	1.3
	2314	-0.7	-0.2		2334	0.1	0.0
14	0548	5.6	1.7	29	0609	4.9	1.5
Su	1155	0.7	0.2	M	1216	1.3	0.4
	1745	4.9	1.5		1755	4.1	1.2
15	0005	-0.6	-0.2	30	0009	0.3	0.1
M	0640	5.6	1.7	Tu	0646	4.9	1.5
	1251	0.7	0.2		1254	1.2	0.4
	1840	4.7	1.4		1834	4.0	1.2

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0045	0.5	0.2
W	0720	4.8	1.5
	1333	1.2	0.4
	1915	3.9	1.2
2	0123	0.7	0.2
Th	0754	4.7	1.4
	1414	1.2	0.4
	2000	3.8	1.2
3	0200	0.9	0.3
F	0833	4.6	1.4
	1458	1.2	0.4
	2047	3.7	1.1
4	0244	1.1	0.3
Sa	0914	4.5	1.4
	1547	1.1	0.3
	2147	3.6	1.1
5	0338	1.3	0.4
Su	1002	4.4	1.3
	1640	0.9	0.3
	2253	3.7	1.1
6	0442	1.5	0.5
M	1058	4.4	1.3
	1738	0.7	0.2
7	0002	3.9	1.2
Tu	0549	1.5	0.5
	1157	4.4	1.3
	1839	0.4	0.1
8	0108	4.2	1.3
W	0702	1.4	0.4
	1300	4.5	1.4
	1937	0.1	0.0
9	0211	4.6	1.4
Th	0806	1.2	0.4
	1358	4.7	1.4
	2032	-0.3	-0.1
10	0306	5.0	1.5
F	0907	0.9	0.3
	1457	4.9	1.5
	2125	-0.6	-0.2
11	0358	5.4	1.6
Sa	1002	0.7	0.2
	1553	5.0	1.5
	2216	-0.8	-0.2
12	0448	5.7	1.7
Su	1053	0.4	0.1
	1645	5.1	1.6
	2304	-0.9	-0.3
13	0536	5.8	1.8
M	1144	0.3	0.1
	1737	5.1	1.6
	2353	-0.8	-0.2
14	0624	5.8	1.8
Tu	1235	0.2	0.1
	1829	5.0	1.5
15	0042	-0.5	-0.2
W	0709	5.7	1.7
	1325	0.2	0.1
	1922	4.8	1.5

Day	Time h m	Height ft	Height m
16	0131	-0.1	0.0
Th	0757	5.4	1.6
	1418	0.3	0.1
	2018	4.5	1.4
17	0223	0.3	0.1
F	0847	5.1	1.6
	1511	0.5	0.2
	2119	4.2	1.3
18	0318	0.8	0.2
Sa	0938	4.7	1.4
	1611	0.6	0.2
	2225	3.9	1.2
19	0418	1.3	0.4
Su	1034	4.4	1.3
	1715	0.7	0.2
	2340	3.8	1.2
20	0527	1.6	0.5
M	1134	4.1	1.2
	1820	0.7	0.2
21	0053	3.9	1.2
Tu	0644	1.8	0.5
	1239	4.0	1.2
	1918	0.6	0.2
22	0158	4.0	1.2
W	0750	1.8	0.5
	1334	4.0	1.2
	2011	0.5	0.2
23	0251	4.3	1.3
Th	0846	1.6	0.5
	1427	4.0	1.2
	2056	0.3	0.1
24	0333	4.5	1.4
F	0931	1.4	0.4
	1512	4.1	1.2
	2133	0.2	0.1
25	0408	4.7	1.4
Sa	1010	1.2	0.4
	1551	4.2	1.3
	2210	0.1	0.0
26	0440	4.9	1.5
Su	1045	1.1	0.3
	1628	4.3	1.3
	2242	0.0	0.0
27	0512	5.0	1.5
M	1120	0.9	0.3
	1703	4.3	1.3
	2314	0.0	0.0
28	0544	5.1	1.6
Tu	1152	0.8	0.2
	1737	4.3	1.3
	2345	0.1	0.0
29	0612	5.1	1.6
W	1222	0.8	0.2
	1811	4.3	1.3
30	0016	0.2	0.1
Th	0640	5.0	1.5
	1254	0.7	0.2
	1846	4.2	1.3
31	0048	0.4	0.1
F	0712	4.9	1.5
	1328	0.7	0.2
	1923	4.1	1.2

AUGUST

Day	Time h m	Height ft	Height m
1	0123	0.7	0.2
Sa	0744	4.7	1.4
	1407	0.8	0.2
	2007	3.9	1.2
2	0202	1.0	0.3
Su	0821	4.5	1.4
	1452	0.8	0.2
	2101	3.8	1.2
3	0253	1.3	0.4
M	0909	4.3	1.3
	1548	0.8	0.2
	2209	3.7	1.1
4	0356	1.6	0.5
Tu	1009	4.1	1.2
	1654	0.7	0.2
	2332	3.8	1.2
5	0520	1.7	0.5
W	1122	4.1	1.2
	1810	0.5	0.2
6	0052	4.1	1.2
Th	0647	1.6	0.5
	1241	4.2	1.3
	1918	0.2	0.1
7	0158	4.5	1.4
F	0801	1.2	0.4
	1353	4.5	1.4
	2019	-0.2	-0.1
8	0256	5.0	1.5
Sa	0859	0.8	0.2
	1452	4.8	1.5
	2115	-0.6	-0.2
9	0345	5.5	1.7
Su	0951	0.3	0.1
	1546	5.1	1.6
	2203	-0.9	-0.3
10	0431	5.8	1.8
M	1039	0.0	0.0
	1636	5.3	1.6
	2249	-1.0	-0.3
11	0513	5.9	1.8
Tu	1125	-0.2	-0.1
	1722	5.4	1.6
	2334	-0.9	-0.3
12	0557	5.9	1.8
W	1208	-0.3	-0.1
	1809	5.2	1.6
13	0019	-0.6	-0.2
Th	0638	5.7	1.7
	1253	-0.2	-0.1
	1856	5.0	1.5
14	0103	-0.1	0.0
F	0720	5.3	1.6
	1339	0.0	0.0
	1946	4.6	1.4
15	0149	0.4	0.1
Sa	0803	4.9	1.5
	1429	0.3	0.1
	2041	4.2	1.3

Day	Time h m	Height ft	Height m
16	0236	1.0	0.3
Su	0850	4.4	1.3
	1522	0.6	0.2
	2145	3.8	1.2
17	0338	1.5	0.5
M	0945	3.9	1.2
	1627	0.9	0.3
	2308	3.6	1.1
18	0455	1.9	0.6
Tu	1054	3.6	1.1
	1748	1.0	0.3
19	0036	3.6	1.1
W	0633	2.0	0.6
	1215	3.5	1.1
	1857	0.9	0.3
20	0145	3.9	1.2
Th	0747	1.8	0.5
	1326	3.6	1.1
	1955	0.7	0.2
21	0233	4.2	1.3
F	0838	1.5	0.5
	1417	3.8	1.2
	2036	0.4	0.1
22	0310	4.5	1.4
Sa	0915	1.2	0.4
	1502	4.0	1.2
	2113	0.2	0.1
23	0342	4.7	1.4
Su	0949	0.9	0.3
	1536	4.2	1.3
	2147	0.0	0.0
24	0412	5.0	1.5
M	1019	0.6	0.2
	1610	4.4	1.3
	2218	-0.1	0.0
25	0440	5.1	1.6
Tu	1048	0.4	0.1
	1641	4.5	1.4
	2247	-0.1	0.0
26	0507	5.2	1.6
W	1116	0.3	0.1
	1713	4.6	1.4
	2316	-0.1	0.0
27	0534	5.1	1.6
Th	1145	0.2	0.1
	1744	4.6	1.4
	2347	0.1	0.0
28	0601	5.0	1.5
F	1216	0.2	0.1
	1819	4.5	1.4
29	0019	0.3	0.1
Sa	0630	4.9	1.5
	1248	0.2	0.1
	1854	4.3	1.3
30	0051	0.6	0.2
Su	0703	4.7	1.4
	1324	0.3	0.1
	1936	4.1	1.2
31	0131	1.0	0.3
M	0739	4.4	1.3
	1410	0.5	0.2
	2029	3.9	1.2

SEPTEMBER

Day	Time h m	Height ft	Height m
1	0224	1.3	0.4
Tu	0829	4.1	1.2
	1509	0.7	0.2
	2143	3.7	1.1
2	0338	1.7	0.5
W	0940	3.8	1.2
	1628	0.7	0.2
	2318	3.8	1.2
3	0517	1.7	0.5
Th	1113	3.7	1.1
	1756	0.6	0.2
4	0044	4.1	1.2
F	0649	1.4	0.4
	1239	3.9	1.2
	1910	0.2	0.1
5	0147	4.6	1.4
Sa	0755	0.9	0.3
	1351	4.4	1.3
	2010	-0.2	-0.1
6	0240	5.1	1.6
Su	0849	0.4	0.1
	1446	4.8	1.5
	2059	-0.6	-0.2
7	0325	5.5	1.7
M	0935	-0.1	0.0
	1534	5.2	1.6
	2148	-0.8	-0.2
8	0406	5.8	1.8
Tu	1018	-0.5	-0.2
	1621	5.4	1.6
	2230	-0.9	-0.3
9	0446	5.8	1.8
W	1057	-0.7	-0.2
	1705	5.4	1.6
	2312	-0.7	-0.2
10	0524	5.7	1.7
Th	1139	-0.7	-0.2
	1747	5.3	1.6
	2352	-0.4	-0.1
11	0602	5.4	1.6
F	1219	-0.5	-0.2
	1829	5.0	1.5
12	0033	0.1	0.0
Sa	0641	5.0	1.5
	1301	-0.2	-0.1
	1915	4.5	1.4
13	0115	0.6	0.2
Su	0720	4.5	1.4
	1343	0.2	0.1
	2004	4.1	1.2
14	0200	1.2	0.4
M	0802	4.0	1.2
	1434	0.7	0.2
	2106	3.7	1.1
15	0301	1.7	0.5
Tu	0855	3.5	1.1
	1538	1.0	0.3
	2232	3.4	1.0

Day	Time h m	Height ft	Height m
16	0430	2.0	0.6
W	1015	3.2	1.0
	1703	1.2	0.4
17	0012	3.5	1.1
Th	0621	1.9	0.6
	1154	3.1	0.9
	1826	1.1	0.3
18	0117	3.8	1.2
F	0729	1.6	0.5
	1310	3.3	1.0
	1925	0.8	0.2
19	0203	4.1	1.2
Sa	0812	1.2	0.4
	1358	3.6	1.1
	2007	0.6	0.2
20	0235	4.4	1.3
Su	0848	0.9	0.3
	1438	4.0	1.2
	2043	0.3	0.1
21	0304	4.7	1.4
M	0916	0.5	0.2
	1512	4.3	1.3
	2117	0.1	0.0
22	0333	4.9	1.5
Tu	0944	0.2	0.1
	1544	4.5	1.4
	2147	0.0	0.0
23	0400	5.1	1.6
W	1013	0.0	0.0
	1615	4.7	1.4
	2218	-0.1	0.0
24	0428	5.1	1.6
Th	1041	-0.2	-0.1
	1646	4.8	1.5
	2247	0.0	0.0
25	0456	5.1	1.6
F	1110	-0.3	-0.1
	1718	4.8	1.5
	2318	0.1	0.0
26	0526	5.0	1.5
Sa	1142	-0.3	-0.1
	1754	4.7	1.4
	2353	0.3	0.1
27	0555	4.8	1.5
Su	1215	-0.2	-0.1
	1832	4.5	1.4
28	0030	0.7	0.2
M	0632	4.5	1.4
	1254	0.0	0.0
	1917	4.3	1.3
29	0115	1.0	0.3
Tu	0714	4.2	1.3
	1344	0.3	0.1
	2016	4.0	1.2
30	0212	1.4	0.4
W	0810	3.8	1.2
	1450	0.6	0.2
	2138	3.8	1.2

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

TALARA, PERU, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0343	1.6	0.5	16	0546	1.8	0.5
Th	0935	3.5	1.1	F	1121	2.9	0.9
	1615	0.7	0.2		1733	1.2	0.4
	2309	3.9	1.2				
2	0525	1.5	0.5	17	0024	3.8	1.2
F	1117	3.5	1.1	Sa	0651	1.4	0.4
	1746	0.6	0.2		1233	3.2	1.0
					1837	1.0	0.3
3	0028	4.2	1.3	18	0110	4.1	1.2
Sa	0647	1.0	0.3	Su	0733	1.0	0.3
	1241	3.9	1.2		1326	3.5	1.1
	1857	0.2	0.1		1924	0.8	0.2
4	0129	4.7	1.4	19	0147	4.3	1.3
Su	0742	0.5	0.2	M	0806	0.6	0.2
	1342	4.4	1.3		1406	3.9	1.2
	1955	-0.1	0.0		2003	0.6	0.2
5	0217	5.1	1.6	20	0219	4.6	1.4
M	0832	0.0	0.0	Tu	0835	0.3	0.1
	1435	4.8	1.5		1440	4.2	1.3
	2043	-0.4	-0.1		2038	0.3	0.1
6	0259	5.4	1.6	21	0248	4.8	1.5
Tu	0913	-0.5	-0.2	W	0907	-0.1	0.0
	1520	5.1	1.6		1513	4.5	1.4
	2126	-0.5	-0.2		2113	0.2	0.1
7	0339	5.6	1.7	22	0320	5.0	1.5
W	0952	-0.8	-0.2	Th	0936	-0.3	-0.1
	1603	5.3	1.6		1548	4.8	1.5
	2208	-0.5	-0.2		2145	0.1	0.0
8	0416	5.5	1.7	23	0349	5.0	1.5
Th	1031	-0.9	-0.3	F	1007	-0.5	-0.2
	1645	5.3	1.6		1621	4.9	1.5
	2246	-0.3	-0.1		2221	0.2	0.1
9	0452	5.4	1.6	24	0421	5.0	1.5
F	1109	-0.8	-0.2	Sa	1039	-0.6	-0.2
	1725	5.2	1.6		1658	5.0	1.5
	2326	0.0	0.0		2257	0.3	0.1
10	0527	5.1	1.6	25	0457	4.9	1.5
Sa	1145	-0.6	-0.2	Su	1116	-0.6	-0.2
	1806	4.9	1.5		1739	4.9	1.5
					2335	0.5	0.2
11	0004	0.4	0.1	26	0533	4.7	1.4
Su	0603	4.7	1.4	M	1155	-0.4	-0.1
	1224	-0.2	-0.1		1822	4.7	1.4
	1846	4.5	1.4				
12	0046	0.9	0.3	27	0021	0.8	0.2
M	0640	4.2	1.3	Tu	0615	4.4	1.3
	1304	0.2	0.1		1240	-0.2	-0.1
	1935	4.1	1.2		1915	4.5	1.4
13	0131	1.4	0.4	28	0115	1.1	0.3
Tu	0720	3.7	1.1	W	0704	4.0	1.2
	1349	0.6	0.2		1333	0.1	0.0
	2034	3.7	1.1		2016	4.3	1.3
14	0234	1.8	0.5	29	0224	1.3	0.4
W	0813	3.3	1.0	Th	0813	3.7	1.1
	1450	1.0	0.3		1442	0.4	0.1
	2150	3.5	1.1		2132	4.2	1.3
15	0409	1.9	0.6	30	0351	1.4	0.4
Th	0935	2.9	0.9	F	0939	3.5	1.1
	1609	1.2	0.4		1605	0.6	0.2
	2317	3.6	1.1		2253	4.2	1.3
				31	0519	1.1	0.3
				Sa	1112	3.6	1.1
					1726	0.6	0.2

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0002	4.5	1.4	16	0002	4.1	1.2
Su	0628	0.7	0.2	M	0636	1.0	0.3
	1228	3.9	1.2		1236	3.4	1.0
	1833	0.4	0.1		1825	1.1	0.3
2	0100	4.7	1.4	17	0047	4.3	1.3
M	0721	0.2	0.1	Tu	0716	0.7	0.2
	1329	4.3	1.3		1321	3.8	1.2
	1932	0.2	0.1		1914	1.0	0.3
3	0147	5.0	1.5	18	0124	4.5	1.4
Tu	0806	-0.2	-0.1	W	0751	0.3	0.1
	1419	4.7	1.4		1403	4.1	1.2
	2019	0.1	0.0		1956	0.8	0.2
4	0230	5.2	1.6	19	0201	4.7	1.4
W	0848	-0.5	-0.2	Th	0825	-0.1	0.0
	1504	5.0	1.5		1443	4.5	1.4
	2104	0.0	0.0		2038	0.6	0.2
5	0310	5.2	1.6	20	0238	4.8	1.5
Th	0930	-0.7	-0.2	F	0901	-0.4	-0.1
	1547	5.1	1.6		1523	4.8	1.5
	2147	0.1	0.0		2118	0.5	0.2
6	0347	5.1	1.6	21	0315	4.9	1.5
F	1007	-0.8	-0.2	Sa	0939	-0.6	-0.2
	1628	5.1	1.6		1604	5.0	1.5
	2227	0.3	0.1		2200	0.5	0.2
7	0424	5.0	1.5	22	0355	4.9	1.5
Sa	1044	-0.7	-0.2	Su	1018	-0.7	-0.2
	1707	5.0	1.5		1646	5.1	1.6
	2307	0.5	0.2		2244	0.5	0.2
8	0458	4.7	1.4	23	0437	4.9	1.5
Su	1121	-0.5	-0.2	M	1100	-0.7	-0.2
	1747	4.8	1.5		1730	5.2	1.6
	2347	0.8	0.2		2332	0.6	0.2
9	0534	4.4	1.3	24	0521	4.7	1.4
M	1158	-0.2	-0.1	Tu	1145	-0.6	-0.2
	1830	4.5	1.4		1818	5.1	1.6
10	0030	1.1	0.3	25	0022	0.8	0.2
Tu	0613	4.0	1.2	W	0611	4.5	1.4
	1238	0.2	0.1		1235	-0.4	-0.1
	1915	4.3	1.3		1912	5.0	1.5
11	0115	1.4	0.4	26	0120	0.9	0.3
W	0654	3.6	1.1	Th	0707	4.2	1.3
	1320	0.5	0.2		1328	-0.1	0.0
	2005	4.0	1.2		2010	4.8	1.5
12	0213	1.7	0.5	27	0226	1.0	0.3
Th	0746	3.3	1.0	F	0815	3.9	1.2
	1409	0.9	0.3		1431	0.3	0.1
	2103	3.9	1.2		2114	4.7	1.4
13	0329	1.7	0.5	28	0338	1.0	0.3
F	0855	3.0	0.9	Sa	0932	3.8	1.2
	1511	1.1	0.3		1543	0.5	0.2
	2209	3.8	1.2		2222	4.6	1.4
14	0445	1.6	0.5	29	0453	0.8	0.2
Sa	1020	3.0	0.9	Su	1052	3.8	1.2
	1623	1.3	0.4		1655	0.7	0.2
	2311	3.9	1.2		2325	4.6	1.4
15	0548	1.4	0.4	30	0556	0.6	0.2
Su	1136	3.1	0.9	M	1205	4.0	1.2
	1729	1.3	0.4		1804	0.8	0.2

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0023	4.7	1.4	16	0615	0.9	0.3
Tu	0652	0.2	0.1	W	1231	3.7	1.1
	1309	4.3	1.3		1815	1.4	0.4
	1905	0.8	0.2				
2	0116	4.8	1.5	17	0026	4.3	1.3
W	0742	0.0	0.0	Th	0702	0.5	0.2
	1403	4.5	1.4		1326	4.0	1.2
	1959	0.7	0.2		1913	1.3	0.4
3	0201	4.8	1.5	18	0116	4.5	1.4
Th	0827	-0.3	-0.1	F	0750	0.2	0.1
	1452	4.7	1.4		1416	4.4	1.3
	2048	0.8	0.2		2007	1.2	0.4
4	0244	4.8	1.5	19	0203	4.7	1.4
F	0910	-0.4	-0.1	Sa	0835	-0.2	-0.1
	1537	4.9	1.5		1503	4.8	1.5
	2133	0.8	0.2		2059	1.0	0.3
5	0325	4.7	1.4	20	0251	4.8	1.5
Sa	0949	-0.4	-0.1	Su	0918	-0.5	-0.2
	1619	4.9	1.5		1550	5.1	1.6
	2213	0.9	0.3		2149	0.8	0.2
6	0402	4.6	1.4	21	0339	4.9	1.5
Su	1027	-0.4	-0.1	M	1004	-0.7	-0.2
	1658	4.9	1.5		1636	5.4	1.6
	2256	1.0	0.3		2238	0.7	0.2
7	0440	4.5	1.4	22	0427	5.0	1.5
M	1103	-0.3	-0.1	Tu	1050	-0.8	-0.2
	1736	4.9	1.5		1724	5.6	1.7
	2337	1.1	0.3		2329	0.6	0.2
8	0518	4.3	1.3	23	0519	5.0	1.5
Tu	1139	-0.1	0.0	W	1139	-0.7	-0.2
	1815	4.7	1.4		1811	5.6	1.7
9	0019	1.2	0.4	24	0019	0.5	0.2
W	0558	4.0	1.2	Th	0609	4.8	1.5
	1216	0.2	0.1		1227	-0.5	-0.2
	1854	4.6	1.4		1901	5.5	1.7
10	0101	1.3	0.4	25	0112	0.6	0.2
Th	0638	3.8	1.2	F	0704	4.6	1.4
	1254	0.4	0.1		1319	-0.2	-0.1
	1936	4.5	1.4		1952	5.4	1.6
11	0149	1.4	0.4	26	0210	0.6	0.2
F	0724	3.6	1.1	Sa	0804	4.4	1.3
	1336	0.7	0.2		1415	0.2	0.1
	2018	4.3	1.3		2045	5.1	1.6
12	0237	1.5	0.5	27	0309	0.7	0.2
Sa	0816	3.4	1.0	Su	0909	4.2	1.3
	1418	1.0	0.3		1514	0.6	0.2
	2103	4.2	1.3		2143	4.9	1.5
13	0332	1.4	0.4	28	0414	0.7	0.2
Su	0915	3.3	1.0	M	1020	4.0	1.2
	1511	1.2	0.4		1620	1.0	0.3
	2153	4.2	1.3		2243	4.7	1.4
14	0428	1.3	0.4	29	0517	0.6	0.2
M	1023	3.3	1.0	Tu	1135	4.0	1.2
	1611	1.4	0.4		1730	1.3	0.4
	2244	4.2	1.3		2344	4.5	1.4
15	0524	1.1	0.3	30	0623	0.5	0.2
Tu	1130	3.4	1.0	W	1247	4.1	1.2
	1712	1.5	0.5		1839	1.4	0.4
	2335	4.2	1.3				
				31	0044	4.4	1.3
				Th	0721	0.4	0.1
					1351	4.3	1.3
					1945	1.5	0.5

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

GUAYAQUIL, ECUADOR, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height	
	h m	ft	m
1	0241	0.7	0.2
Th	0810	11.8	3.6
	1502	-0.3	-0.1
	2044	12.4	3.8
2	0330	0.5	0.2
F	0900	11.9	3.6
	1550	-0.4	-0.1
	2131	12.6	3.8
3	0419	0.4	0.1
Sa	0947	11.9	3.6
	1636	-0.3	-0.1
	2217	12.6	3.8
4	0506	0.4	0.1
Su	1033	11.9	3.6
	1723	-0.1	0.0
	2302	12.6	3.8
5	0553	0.5	0.2
M	1118	11.7	3.6
	1811	0.3	0.1
	2345	12.3	3.7
6	0641	0.7	0.2
Tu	1206	11.4	3.5
	1901	0.8	0.2
7	0031	12.0	3.7
W	0732	1.0	0.3
	1256	11.1	3.4
	1953	1.3	0.4
8	0120	11.6	3.5
Th	0825	1.2	0.4
	1348	10.7	3.3
	2046	1.7	0.5
9	0213	11.2	3.4
F	0921	1.3	0.4
	1445	10.4	3.2
	2144	2.0	0.6
10	0309	10.9	3.3
Sa	1016	1.4	0.4
	1546	10.2	3.1
	2241	2.1	0.6
11	0408	10.6	3.2
Su	1112	1.2	0.4
	1647	10.3	3.1
	2338	2.1	0.6
12	0506	10.5	3.2
M	1205	1.1	0.3
	1746	10.4	3.2
13	0033	1.9	0.6
Tu	0601	10.5	3.2
	1257	0.9	0.3
	1839	10.7	3.3
14	0123	1.8	0.5
W	0652	10.6	3.2
	1344	0.7	0.2
	1926	11.0	3.4
15	0210	1.6	0.5
Th	0734	10.7	3.3
	1429	0.7	0.2
	2006	11.2	3.4
16	0255	1.6	0.5
F	0814	10.9	3.3
	1509	0.8	0.2
	2042	11.5	3.5
17	0335	1.6	0.5
Sa	0851	11.0	3.4
	1547	0.9	0.3
	2115	11.7	3.6
18	0412	1.6	0.5
Su	0925	11.2	3.4
	1622	1.1	0.3
	2148	12.0	3.7
19	0445	1.7	0.5
M	0958	11.4	3.5
	1649	1.3	0.4
	2223	12.2	3.7
20	0515	1.8	0.5
Tu	1035	11.5	3.5
	1705	1.5	0.5
	2259	12.3	3.7
21	0542	1.8	0.5
W	1115	11.5	3.5
	1726	1.6	0.5
	2342	12.2	3.7
22	0611	1.9	0.6
Th	1201	11.4	3.5
	1806	2.0	0.6
23	0029	11.9	3.6
F	0712	2.1	0.6
	1258	11.0	3.4
	1914	2.5	0.8
24	0125	11.4	3.5
Sa	0839	2.2	0.7
	1402	10.6	3.2
	2113	2.8	0.9
25	0231	11.0	3.4
Su	0957	2.1	0.6
	1517	10.4	3.2
	2231	2.7	0.8
26	0344	10.7	3.3
M	1104	1.7	0.5
	1631	10.5	3.2
	2337	2.2	0.7
27	0458	10.7	3.3
Tu	1207	1.0	0.3
	1745	11.0	3.4
28	0038	1.5	0.5
W	0607	11.0	3.4
	1303	0.3	0.1
	1849	11.6	3.5
29	0134	0.8	0.2
Th	0707	11.5	3.5
	1356	-0.3	-0.1
	1944	12.2	3.7
30	0224	0.2	0.1
F	0800	12.0	3.7
	1445	-0.7	-0.2
	2032	12.7	3.9
31	0311	-0.2	-0.1
Sa	0847	12.2	3.7
	1530	-0.9	-0.3
	2115	13.0	4.0

FEBRUARY

Day	Time	Height	
	h m	ft	m
1	0357	-0.3	-0.1
Su	0930	12.4	3.8
	1614	-0.7	-0.2
	2156	13.0	4.0
2	0441	-0.2	-0.1
M	1012	12.3	3.7
	1657	-0.3	-0.1
	2234	12.8	3.9
3	0523	0.1	0.0
Tu	1051	12.1	3.7
	1741	0.2	0.1
	2313	12.5	3.8
4	0608	0.5	0.2
W	1133	11.7	3.6
	1825	0.9	0.3
	2354	12.1	3.7
5	0653	1.0	0.3
Th	1216	11.3	3.4
	1914	1.6	0.5
6	0037	11.6	3.5
F	0746	1.5	0.5
	1306	10.8	3.3
	2009	2.2	0.7
7	0127	11.0	3.4
Sa	0842	1.8	0.5
	1400	10.3	3.1
	2108	2.6	0.8
8	0223	10.5	3.2
Su	0941	2.0	0.6
	1502	10.0	3.0
	2210	2.7	0.8
9	0325	10.1	3.1
M	1039	1.9	0.6
	1610	9.9	3.0
	2311	2.6	0.8
10	0431	10.0	3.0
Tu	1137	1.6	0.5
	1714	10.1	3.1
11	0007	2.2	0.7
W	0533	10.1	3.1
	1230	1.2	0.4
	1812	10.5	3.2
12	0059	1.8	0.5
Th	0628	10.4	3.2
	1319	0.9	0.3
	1902	11.0	3.4
13	0145	1.4	0.4
F	0715	10.7	3.3
	1404	0.7	0.2
	1941	11.4	3.5
14	0229	1.2	0.4
Sa	0753	11.0	3.4
	1445	0.6	0.2
	2017	11.7	3.6
15	0309	1.1	0.3
Su	0829	11.3	3.4
	1522	0.7	0.2
	2050	12.0	3.7
16	0345	1.2	0.4
M	0903	11.6	3.5
	1556	0.9	0.3
	2122	12.2	3.7
17	0418	1.2	0.4
Tu	0936	11.8	3.6
	1622	1.1	0.3
	2155	12.4	3.8
18	0445	1.3	0.4
W	1012	11.9	3.6
	1641	1.3	0.4
	2230	12.4	3.8
19	0505	1.4	0.4
Th	1049	11.9	3.6
	1659	1.6	0.5
	2310	12.3	3.7
20	0531	1.6	0.5
F	1136	11.6	3.5
	1739	2.0	0.6
	2357	11.8	3.6
21	0627	2.0	0.6
Sa	1229	11.1	3.4
	1851	2.7	0.8
22	0056	11.2	3.4
Su	0813	2.3	0.7
	1336	10.6	3.2
	2055	3.0	0.9
23	0207	10.6	3.2
M	0934	2.2	0.7
	1455	10.3	3.1
	2213	2.7	0.8
24	0325	10.3	3.1
Tu	1044	1.7	0.5
	1615	10.5	3.2
	2319	2.0	0.6
25	0444	10.5	3.2
W	1148	0.9	0.3
	1730	11.1	3.4
26	0019	1.2	0.4
Th	0556	11.0	3.4
	1244	0.1	0.0
	1834	11.8	3.6
27	0113	0.3	0.1
F	0654	11.7	3.6
	1335	-0.5	-0.2
	1926	12.5	3.8
28	0203	-0.3	-0.1
Sa	0745	12.2	3.7
	1423	-0.9	-0.3
	2011	12.9	3.9

MARCH

Day	Time	Height	
	h m	ft	m
1	0248	-0.6	-0.2
Su	0829	12.5	3.8
	1507	-1.0	-0.3
	2052	13.1	4.0
2	0331	-0.7	-0.2
M	0908	12.6	3.8
	1550	-0.7	-0.2
	2129	13.0	4.0
3	0413	-0.4	-0.1
Tu	0945	12.4	3.8
	1631	-0.2	-0.1
	2204	12.7	3.9
4	0454	0.0	0.0
W	1022	12.2	3.7
	1712	0.5	0.2
	2239	12.4	3.8
5	0534	0.6	0.2
Th	1059	11.8	3.6
	1752	1.2	0.4
	2317	11.9	3.6
6	0618	1.2	0.4
F	1141	11.3	3.4
	1839	1.9	0.6
	2357	11.4	3.5
7	0706	1.7	0.5
Sa	1227	10.8	3.3
	1932	2.5	0.8
8	0045	10.8	3.3
Su	0803	2.2	0.7
	1319	10.3	3.1
	2034	2.9	0.9
9	0141	10.2	3.1
M	0905	2.4	0.7
	1421	10.0	3.0
	2137	3.0	0.9
10	0247	9.8	3.0
Tu	1007	2.3	0.7
	1530	9.9	3.0
	2240	2.7	0.8
11	0357	9.7	3.0
W	1106	1.9	0.6
	1639	10.1	3.1
	2337	2.2	0.7
12	0500	10.0	3.0
Th	1201	1.5	0.5
	1738	10.6	3.2
13	0030	1.7	0.5
F	0559	10.4	3.2
	1249	1.1	0.3
	1927	11.1	3.4
14	0116	1.2	0.4
Sa	0646	10.8	3.3
	1334	0.8	0.2
	1910	11.5	3.5
15	0200	0.9	0.3
Su	0726	11.2	3.4
	1416	0.7	0.2
	1947	11.9	3.6
16	0239	0.8	0.2
M	0803	11.6	3.5
	1454	0.8	0.2
	2022	12.1	3.7
17	0316	0.8	0.2
Tu	0838	11.8	3.6
	1529	0.9	0.3
	2054	12.3	3.7
18	0350	0.9	0.3
W	0912	12.0	3.7
	1559	1.2	0.4
	2129	12.3	3.7
19	0420	1.1	0.3
Th	0948	12.0	3.7
	1625	1.5	0.5
	2206	12.3	3.7
20	0445	1.3	0.4
F	1030	11.9	3.6
	1654	1.9	0.6
	2248	12.0	3.7
21	0522	1.6	0.5
Sa	1118	11.6	3.5
	1747	2.3	0.7
	2339	11.4	3.5
22	0635	2.0	0.6
Su	1213	11.1	3.4
	1922	2.8	0.9
23	0039	10.8	3.3
M	0802	2.2	0.7
	1325	10.7	3.3
	2044	2.8	0.9
24	0154	10.3	3.1
Tu	0916	2.1	0.6
	1442	10.5	3.2
	2154	2.4	0.7
25	0313	10.2	3.1
W	1023	1.5	0.5
	1559	10.8	3.3
	2258	1.6	0.5
26	0431	10.6	3.2
Th	1124	0.8	0.2
	1711	11.4	3.5
	2356	0.7	0.2
27	0537	11.2	3.4
F	1219	0.0	0.0
	1810	12.0	3.7
28	0049	-0.1	0.0
Sa	0634	11.8	3.6
	1310	-0.5	-0.2
	1902	12.5	3.8
29	0137	-0.6	-0.2
Su	0721	12.3	3.7
	1357	-0.7	-0.2
	1944	12.8	3.9
30	0221	-0.8	-0.2
M	0804	12.5	3.8
	1442	-0.6	-0.2
	2022	12.8	3.9
31	0305	-0.7	-0.2
Tu	0843	12.4	3.8
	1524	-0.2	-0.1
	2057	12.6	3.8

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

GUAYAQUIL, ECUADOR, 1987

Times and Heights of High and Low Waters

APRIL

	Time	Height			Time	Height	
Day	h m	ft	m	Day	h m	ft	m
1	0345	-0.3	-0.1	16	0327	0.8	0.2
W	0919	12.3	3.7	Th	0851	12.0	3.7
	1604	0.3	0.1		1545	1.4	0.4
	2132	12.3	3.7		2107	12.0	3.7
2	0425	0.2	0.1	17	0404	1.0	0.3
Th	0953	12.0	3.7	F	0933	12.0	3.7
	1643	1.0	0.3		1627	1.7	0.5
	2206	11.9	3.6		2148	11.8	3.6
3	0505	0.8	0.2	18	0446	1.2	0.4
F	1030	11.7	3.6	Sa	1018	11.8	3.6
	1725	1.7	0.5		1713	2.1	0.6
	2243	11.5	3.5		2236	11.5	3.5
4	0546	1.4	0.4	19	0536	1.5	0.5
Sa	1109	11.3	3.4	Su	1110	11.5	3.5
	1811	2.3	0.7		1815	2.3	0.7
	2323	11.1	3.4		2328	11.1	3.4
5	0632	1.9	0.6	20	0640	1.8	0.5
Su	1154	10.9	3.3	M	1208	11.2	3.4
	1901	2.7	0.8		1922	2.4	0.7
6	0009	10.6	3.2	21	0034	10.6	3.2
M	0727	2.3	0.7	Tu	0749	1.8	0.5
	1245	10.6	3.2		1317	11.0	3.4
	2002	3.0	0.9		2028	2.2	0.7
7	0106	10.1	3.1	22	0145	10.4	3.2
Tu	0828	2.5	0.8	W	0856	1.6	0.5
	1346	10.3	3.1		1427	10.9	3.3
	2105	3.0	0.9		2133	1.7	0.5
8	0210	9.8	3.0	23	0258	10.4	3.2
W	0931	2.4	0.7	Th	0958	1.2	0.4
	1451	10.2	3.1		1538	11.2	3.4
	2207	2.6	0.8		2232	1.1	0.3
9	0317	9.8	3.0	24	0407	10.8	3.3
Th	1029	2.1	0.6	F	1056	0.7	0.2
	1555	10.4	3.2		1642	11.6	3.5
	2303	2.1	0.6		2328	0.4	0.1
10	0423	10.1	3.1	25	0511	11.3	3.4
F	1124	1.7	0.5	Sa	1151	0.2	0.1
	1655	10.8	3.3		1737	12.0	3.7
	2354	1.6	0.5				
11	0519	10.5	3.2	26	0020	-0.2	-0.1
Sa	1214	1.3	0.4	Su	0607	11.7	3.6
	1746	11.2	3.4		1242	-0.1	0.0
					1828	12.3	3.7
12	0042	1.1	0.3	27	0108	-0.5	-0.2
Su	0609	10.9	3.3	M	0655	12.0	3.7
	1302	1.1	0.3		1329	-0.1	0.0
	1831	11.6	3.5		1913	12.3	3.7
13	0126	0.8	0.2	28	0154	-0.5	-0.2
M	0654	11.3	3.4	Tu	0737	12.1	3.7
	1344	1.0	0.3		1416	0.1	0.0
	1913	11.9	3.6		1951	12.2	3.7
14	0209	0.7	0.2	29	0237	-0.3	-0.1
Tu	0734	11.6	3.5	W	0816	12.0	3.7
	1426	1.0	0.3		1458	0.5	0.2
	1950	12.0	3.7		2028	12.0	3.7
15	0247	0.7	0.2	30	0319	0.0	0.0
W	0813	11.8	3.6	Th	0853	11.8	3.6
	1505	1.2	0.4		1540	1.0	0.3
	2027	12.1	3.7		2103	11.7	3.6

MAY

	Time	Height			Time	Height	
Day	h m	ft	m	Day	h m	ft	m
1	0400	0.5	0.2	16	0353	0.8	0.2
F	0928	11.6	3.5	Sa	0924	11.9	3.6
	1622	1.5	0.5		1622	1.7	0.5
	2137	11.4	3.5		2139	11.5	3.5
2	0440	1.0	0.3	17	0441	0.9	0.3
Sa	1004	11.4	3.5	Su	1012	11.8	3.6
	1704	2.0	0.6		1715	1.8	0.5
	2214	11.1	3.4		2230	11.3	3.4
3	0520	1.5	0.5	18	0534	1.1	0.3
Su	1043	11.3	3.4	M	1105	11.7	3.6
	1747	2.4	0.7		1811	1.8	0.5
	2256	10.8	3.3		2326	11.0	3.4
4	0603	1.9	0.6	19	0632	1.2	0.4
M	1128	11.1	3.4	Tu	1203	11.6	3.5
	1835	2.7	0.8		1909	1.8	0.5
	2342	10.6	3.2				
5	0653	2.2	0.7	20	0024	10.8	3.3
Tu	1215	10.9	3.3	W	0730	1.3	0.4
	1930	2.8	0.9		1301	11.5	3.5
					2007	1.5	0.5
6	0035	10.3	3.1	21	0128	10.7	3.3
W	0749	2.4	0.7	Th	0830	1.2	0.4
	1311	10.8	3.3		1405	11.5	3.5
	2029	2.7	0.8		2106	1.2	0.4
7	0133	10.1	3.1	22	0234	10.7	3.3
Th	0850	2.4	0.7	F	0929	1.0	0.3
	1410	10.8	3.3		1506	11.5	3.5
	2126	2.4	0.7		2203	0.8	0.2
8	0236	10.1	3.1	23	0338	10.9	3.3
F	0947	2.2	0.7	Sa	1026	0.8	0.2
	1509	10.9	3.3		1605	11.7	3.6
	2223	2.0	0.6		2258	0.4	0.1
9	0338	10.3	3.1	24	0439	11.1	3.4
Sa	1044	2.0	0.6	Su	1120	0.7	0.2
	1607	11.1	3.4		1701	11.7	3.6
	2316	1.6	0.5		2349	0.1	0.0
10	0435	10.6	3.2	25	0535	11.3	3.4
Su	1137	1.7	0.5	M	1212	0.6	0.2
	1700	11.3	3.4		1753	11.8	3.6
11	0005	1.2	0.4	26	0039	-0.1	0.0
M	0529	10.9	3.3	Tu	0625	11.5	3.5
	1226	1.5	0.5		1302	0.7	0.2
	1751	11.5	3.5		1841	11.7	3.6
12	0054	0.9	0.3	27	0126	-0.1	0.0
Tu	0620	11.2	3.4	W	0710	11.5	3.5
	1315	1.4	0.4		1350	0.9	0.3
	1838	11.7	3.6		1923	11.5	3.5
13	0139	0.7	0.2	28	0212	0.1	0.0
W	0707	11.5	3.5	Th	0752	11.5	3.5
	1402	1.4	0.4		1435	1.2	0.4
	1923	11.7	3.6		2003	11.3	3.4
14	0223	0.7	0.2	29	0256	0.4	0.1
Th	0753	11.7	3.6	F	0830	11.4	3.5
	1446	1.5	0.5		1520	1.5	0.5
	2006	11.7	3.6		2039	11.1	3.4
15	0309	0.7	0.2	30	0337	0.8	0.2
F	0837	11.8	3.6	Sa	0907	11.3	3.4
	1535	1.6	0.5		1601	1.8	0.5
	2053	11.7	3.6		2116	11.0	3.4
				31	0417	1.1	0.3
				Su	0945	11.3	3.4
					1643	2.1	0.6
					2153	10.9	3.3

JUNE

	Time	Height			Time	Height	
Day	h m	ft	m	Day	h m	ft	m
1	0457	1.5	0.5	16	0521	0.4	0.1
M	1022	11.4	3.5	Tu	1056	12.2	3.7
	1726	2.3	0.7		1754	1.1	0.3
	2233	10.8	3.3		2315	11.4	3.5
2	0536	1.7	0.5	17	0613	0.6	0.2
Tu	1104	11.4	3.5	W	1147	12.1	3.7
	1809	2.4	0.7		1846	1.0	0.3
	2315	10.7	3.3				
3	0618	1.9	0.6	18	0008	11.2	3.4
W	1147	11.4	3.5	Th	0706	0.7	0.2
	1856	2.4	0.7		1240	12.0	3.7
					1940	1.0	0.3
4	0003	10.7	3.3	19	0104	11.1	3.4
Th	0706	2.1	0.6	F	0801	0.9	0.3
	1235	11.4	3.5		1333	11.8	3.6
	1947	2.4	0.7		2035	0.9	0.3
5	0056	10.6	3.2	20	0202	10.9	3.3
F	0759	2.3	0.7	Sa	0856	1.1	0.3
	1327	11.4	3.5		1428	11.6	3.5
	2042	2.3	0.7		2130	0.8	0.2
6	0154	10.5	3.2	21	0300	10.8	3.3
Sa	0900	2.3	0.7	Su	0953	1.3	0.4
	1419	11.3	3.4		1526	11.4	3.5
	2138	2.0	0.6		2224	0.7	0.2
7	0252	10.5	3.2	22	0402	10.8	3.3
Su	1000	2.3	0.7	M	1050	1.3	0.4
	1519	11.3	3.4		1623	11.3	3.4
	2234	1.8	0.5		2319	0.6	0.2
8	0352	10.6	3.2	23	0500	10.8	3.3
M	1057	2.2	0.7	Tu	1144	1.4	0.4
	1618	11.3	3.4		1719	11.1	3.4
	2329	1.4	0.4				
9	0452	10.8	3.3	24	0012	0.5	0.2
Tu	1153	2.0	0.6	W	0556	10.9	3.3
	1714	11.3	3.4		1236	1.4	0.4
					1809	11.0	3.4
10	0023	1.1	0.3	25	0101	0.4	0.1
W	0548	11.0	3.4	Th	0646	11.0	3.4
	1247	1.8	0.5		1327	1.4	0.4
	1809	11.3	3.4		1857	10.9	3.3
11	0115	0.8	0.2	26	0150	0.5	0.2
Th	0644	11.3	3.4	F	0731	11.1	3.4
	1342	1.6	0.5		1415	1.5	0.5
	1902	11.4	3.5		1939	10.9	3.3
12	0205	0.6	0.2	27	0234	0.6	0.2
F	0737	11.6	3.5	Sa	0812	11.2	3.4
	1433	1.5	0.5		1500	1.6	0.5
	1952	11.5	3.5		2019	10.8	3.3
13	0254	0.4	0.1	28	0316	0.8	0.2
Sa	0828	11.8	3.6	Su	0848	11.3	3.4
	1522	1.3	0.4		1542	1.8	0.5
	2043	11.5	3.5		2057	10.8	3.3
14	0343	0.4	0.1	29	0356	1.0	0.3
Su	0918	12.0	3.7	M	0925	11.4	3.5
	1612	1.2	0.4		1622	1.9	0.6
	2133	11.5	3.5		2134	10.9	3.3
15	0432	0.4	0.1	30	0435	1.3	0.4
M	1007	12.2	3.7	Tu	1001	11.6	3.5
	1702	1.1	0.3		1701	2.0	0.6
	2223	11.5	3.5		2211	11.0	3.4

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

GUAYAQUIL, ECUADOR, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height	
	h m	ft	m
1	0510	1.5	0.5
W	1037	11.8	3.6
	1739	2.1	0.6
	2249	11.1	3.4
2	0542	1.7	0.5
Th	1115	11.9	3.6
	1816	2.1	0.6
	2331	11.1	3.4
3	0611	1.9	0.6
F	1157	11.9	3.6
	1857	2.1	0.6
4	0016	11.1	3.4
Sa	0648	2.1	0.6
	1243	11.8	3.6
	1949	2.1	0.6
5	0109	10.9	3.3
Su	0751	2.4	0.7
	1336	11.6	3.5
	2050	2.2	0.7
6	0207	10.7	3.3
M	0912	2.6	0.8
	1434	11.3	3.4
	2153	2.0	0.6
7	0311	10.5	3.2
Tu	1021	2.6	0.8
	1536	11.0	3.4
	2258	1.8	0.5
8	0418	10.6	3.2
W	1127	2.4	0.7
	1644	10.9	3.3
	2358	1.4	0.4
9	0526	10.8	3.3
Th	1228	2.1	0.6
	1746	11.0	3.4
10	0054	0.9	0.3
F	0628	11.2	3.4
	1323	1.6	0.5
	1846	11.2	3.4
11	0147	0.4	0.1
Sa	0726	11.7	3.6
	1417	1.1	0.3
	1944	11.5	3.5
12	0238	0.0	0.0
Su	0819	12.1	3.7
	1507	0.7	0.2
	2035	11.7	3.6
13	0327	-0.2	-0.1
M	0908	12.5	3.8
	1556	0.5	0.2
	2124	11.9	3.6
14	0414	-0.3	-0.1
Tu	0953	12.6	3.8
	1643	0.3	0.1
	2211	12.0	3.7
15	0502	-0.2	-0.1
W	1039	12.7	3.9
	1730	0.4	0.1
	2257	11.9	3.6

Day	Time	Height	
	h m	ft	m
16	0547	0.1	0.0
Th	1123	12.5	3.8
	1819	0.5	0.2
	2344	11.7	3.6
17	0637	0.5	0.2
F	1210	12.3	3.7
	1907	0.7	0.2
18	0032	11.3	3.4
Sa	0728	1.0	0.3
	1258	11.9	3.6
	2000	1.0	0.3
19	0125	11.0	3.4
Su	0823	1.5	0.5
	1349	11.4	3.5
	2056	1.2	0.4
20	0221	10.6	3.2
M	0921	1.8	0.5
	1445	11.0	3.4
	2152	1.3	0.4
21	0322	10.4	3.2
Tu	1019	2.0	0.6
	1544	10.7	3.3
	2249	1.2	0.4
22	0426	10.3	3.1
W	1116	2.0	0.6
	1645	10.5	3.2
	2345	1.1	0.3
23	0526	10.4	3.2
Th	1212	1.9	0.6
	1743	10.5	3.2
24	0036	0.8	0.2
F	0622	10.7	3.3
	1303	1.7	0.5
	1836	10.6	3.2
25	0126	0.7	0.2
Sa	0710	11.0	3.4
	1352	1.5	0.5
	1921	10.7	3.3
26	0211	0.6	0.2
Su	0752	11.2	3.4
	1436	1.4	0.4
	2000	10.9	3.3
27	0254	0.7	0.2
M	0828	11.5	3.5
	1518	1.4	0.4
	2037	11.0	3.4
28	0332	0.8	0.2
Tu	0901	11.7	3.6
	1557	1.5	0.5
	2112	11.2	3.4
29	0408	1.0	0.3
W	0933	11.9	3.6
	1632	1.6	0.5
	2145	11.3	3.4
30	0438	1.3	0.4
Th	1006	12.1	3.7
	1704	1.7	0.5
	2220	11.5	3.5
31	0502	1.5	0.5
F	1041	12.2	3.7
	1728	1.8	0.5
	2257	11.5	3.5

AUGUST

Day	Time	Height	
	h m	ft	m
1	0513	1.7	0.5
Sa	1120	12.2	3.7
	1750	1.9	0.6
	2339	11.4	3.5
2	0542	1.9	0.6
Su	1203	11.9	3.6
	1829	2.0	0.6
3	0028	11.1	3.4
M	0632	2.4	0.7
	1255	11.5	3.5
	1949	2.3	0.7
4	0128	10.7	3.3
Tu	0823	2.9	0.9
	1356	11.0	3.4
	2121	2.3	0.7
5	0239	10.4	3.2
W	0956	3.0	0.9
	1507	10.6	3.2
	2233	2.0	0.6
6	0355	10.4	3.2
Th	1106	2.6	0.8
	1621	10.6	3.2
	2337	1.4	0.4
7	0508	10.7	3.3
F	1209	1.9	0.6
	1732	10.8	3.3
8	0036	0.7	0.2
Sa	0615	11.3	3.4
	1307	1.2	0.4
	1836	11.3	3.4
9	0129	0.0	0.0
Su	0713	12.0	3.7
	1359	0.5	0.2
	1932	11.8	3.6
10	0219	-0.5	-0.2
M	0805	12.6	3.8
	1448	0.0	0.0
	2022	12.2	3.7
11	0307	-0.8	-0.2
Tu	0850	12.9	3.9
	1533	-0.3	-0.1
	2107	12.4	3.8
12	0351	-0.7	-0.2
W	0933	13.0	4.0
	1617	-0.3	-0.1
	2149	12.4	3.8
13	0436	-0.4	-0.1
Th	1013	12.9	3.9
	1702	-0.1	0.0
	2232	12.2	3.7
14	0521	0.1	0.0
F	1054	12.6	3.8
	1747	0.3	0.1
	2313	11.9	3.6
15	0605	0.7	0.2
Sa	1134	12.2	3.7
	1835	0.8	0.2
	2358	11.4	3.5

Day	Time	Height	
	h m	ft	m
16	0656	1.4	0.4
Su	1219	11.6	3.5
	1925	1.3	0.4
17	0048	10.9	3.3
M	0749	2.0	0.6
	1309	11.1	3.4
	2020	1.7	0.5
18	0142	10.4	3.2
Tu	0848	2.4	0.7
	1405	10.5	3.2
	2119	1.8	0.5
19	0245	10.1	3.1
W	0949	2.6	0.8
	1507	10.1	3.1
	2219	1.8	0.5
20	0349	10.0	3.0
Th	1050	2.4	0.7
	1613	10.0	3.0
	2316	1.5	0.5
21	0455	10.2	3.1
F	1146	2.0	0.6
	1716	10.2	3.1
22	0010	1.1	0.3
Sa	0554	10.6	3.2
	1238	1.6	0.5
	1810	10.5	3.2
23	0059	0.8	0.2
Su	0644	11.1	3.4
	1326	1.2	0.4
	1857	10.8	3.3
24	0144	0.6	0.2
M	0723	11.4	3.5
	1410	1.0	0.3
	1937	11.1	3.4
25	0226	0.5	0.2
Tu	0800	11.7	3.6
	1449	1.0	0.3
	2012	11.3	3.4
26	0305	0.7	0.2
W	0833	11.9	3.6
	1527	1.0	0.3
	2046	11.5	3.5
27	0339	0.9	0.3
Th	0904	12.1	3.7
	1600	1.2	0.4
	2118	11.7	3.6
28	0408	1.2	0.4
F	0935	12.2	3.7
	1628	1.4	0.4
	2151	11.8	3.6
29	0425	1.5	0.5
Sa	1009	12.3	3.7
	1644	1.6	0.5
	2227	11.8	3.6
30	0434	1.7	0.5
Su	1046	12.1	3.7
	1702	1.7	0.5
	2309	11.6	3.5
31	0507	2.1	0.6
M	1128	11.8	3.6
	1739	2.0	0.6

SEPTEMBER

Day	Time	Height	
	h m	ft	m
1	0000	11.2	3.4
Tu	0558	2.6	0.8
	1221	11.2	3.4
	1903	2.4	0.7
2	0103	10.7	3.3
W	0813	3.1	0.9
	1330	10.6	3.2
	2059	2.5	0.8
3	0218	10.4	3.2
Th	0940	3.0	0.9
	1450	10.3	3.1
	2213	2.0	0.6
4	0338	10.4	3.2
F	1050	2.3	0.7
	1608	10.4	3.2
	2318	1.3	0.4
5	0453	10.9	3.3
Sa	1151	1.5	0.5
	1722	10.9	3.3
6	0015	0.4	0.1
Su	0559	11.7	3.6
	1246	0.5	0.2
	1822	11.6	3.5
7	0107	-0.3	-0.1
M	0656	12.4	3.8
	1335	-0.2	-0.1
	1916	12.2	3.7
8	0156	-0.8	-0.2
Tu	0744	12.9	3.9
	1422	-0.6	-0.2
	2003	12.6	3.8
9	0243	-0.9	-0.3
W	0827	13.1	4.0
	1508	-0.8	-0.2
	2045	12.7	3.9
10	0326	-0.8	-0.2
Th	0906	13.1	4.0
	1550	-0.6	-0.2
	2125	12.6	3.8
11	0410	-0.3	-0.1
F	0943	12.8	3.9
	1633	-0.2	-0.1
	2203	12.3	3.7
12	0453	0.4	0.1
Sa	1021	12.4	3.8
	1717	0.4	0.1
	2243	11.9	3.6
13	0536	1.1	0.3
Su	1059	11.9	3.6
	1800	1.0	0.3
	2325	11.4	3.5
14	0624	1.8	0.5
M	1141	11.3	3.4
	1851	1.6	0.5
15	0011	10.9	3.3
Tu	0717	2.4	0.7
	1229	10.7	3.3
	1945	2.0	0.6

Day	Time	Height	
	h m	ft	m
16	0104	10.4	3.2
W	0818	2.8	0.9
	1327	10.2	3.1
	2048	2.2	0.7
17	0207	10.1	3.1
Th	0920	2.8	0.9
	1431	9.8	3.0
	2147	2.1	0.6
18	0313	10.0	3.0
F	1020	2.5	0.8
	1539	9.8	3.0
	2245	1.8	0.5
19	0419	10.3	3.1
Sa	1117	2.0	0.6
	1644	10.1	3.1
	2338	1.3	0.4
20	0518	10.8	3.3
Su	1209	1.4	0.4
	1740	10.5	3.2
21	0028	0.9	0.3
M	0607	11.2	3.4
	1255	1.0	0.3
	1828	11.0	3.4
22	0115	0.7	0.2
Tu	0649	11.6	3.5
	1339	0.7	0.2
	1907	11.3	3.4
23	0156	0.6	0.2
W	0728	11.9	3.6
	1419	0.7	0.2
	1944	11.5	3.5
24	0235	0.8	0.2
Th	0801	12.0	3.7
	1456	0.8	0.2
	2019	11.7	3.6
25	0310	1.1	0.3
F	0834	12.1	3.7
	1529	1.0	0.3
	2051	11.8	3.6
26	0342	1.4	0.4
Sa	0906	12.1	3.7
	1557	1.2	0.4
	2127	11.9	3.6
27	0405	1.7	0.5
Su	0941	12.1	3.7
	1617	1.5	0.5
	2204	11.8	3.6
28	0418	2.0	0.6
M	1020	11.8	3.6
	1637	1.7	0.5
	2249	11.6	3.5
29	0456	2.4	0.7
Tu	1105	11.4	3.5
	1726	2.1	0.6
	2342	11.2	3.4
30	0627	2.9	0.9
W	1203	10.8	3.3
	1919	2.4	0.7

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

GUAYAQUIL, ECUADOR, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0048	10.7	3.3	16	0130	10.3	3.1
Th	0810	3.0	0.9	F	0847	2.8	0.9
	1317	10.3	3.1		1354	9.8	3.0
	2042	2.3	0.7		2111	2.3	0.7
2	0205	10.5	3.2	17	0234	10.3	3.1
F	0924	2.6	0.8	Sa	0947	2.5	0.8
	1436	10.1	3.1		1500	9.9	3.0
	2153	1.8	0.5		2207	2.0	0.6
3	0322	10.7	3.3	18	0336	10.6	3.2
Sa	1029	1.8	0.5	Su	1041	1.9	0.6
	1554	10.4	3.2		1603	10.1	3.1
	2255	1.1	0.3		2303	1.6	0.5
4	0434	11.3	3.4	19	0434	10.9	3.3
Su	1127	0.9	0.3	M	1132	1.4	0.4
	1703	11.1	3.4		1700	10.5	3.2
	2351	0.3	0.1		2353	1.3	0.4
5	0537	12.0	3.7	20	0524	11.3	3.4
M	1221	0.1	0.0	Tu	1222	1.0	0.3
	1804	11.8	3.6		1749	10.9	3.3
6	0043	-0.3	-0.1	21	0041	1.1	0.3
Tu	0630	12.5	3.8	W	0612	11.6	3.5
	1310	-0.6	-0.2		1305	0.7	0.2
	1855	12.3	3.7		1834	11.3	3.4
7	0132	-0.7	-0.2	22	0124	1.0	0.3
W	0718	12.9	3.9	Th	0652	11.8	3.6
	1357	-0.9	-0.3		1347	0.6	0.2
	1940	12.6	3.8		1915	11.5	3.5
8	0219	-0.7	-0.2	23	0207	1.1	0.3
Th	0800	12.9	3.9	F	0731	11.9	3.6
	1441	-0.8	-0.2		1428	0.7	0.2
	2021	12.6	3.8		1952	11.7	3.6
9	0302	-0.4	-0.1	24	0245	1.4	0.4
F	0837	12.7	3.9	Sa	0807	11.9	3.6
	1524	-0.5	-0.2		1505	0.9	0.3
	2100	12.4	3.8		2030	11.8	3.6
10	0345	0.2	0.1	25	0322	1.6	0.5
Sa	0914	12.4	3.8	Su	0844	11.8	3.6
	1606	0.0	0.0		1540	1.1	0.3
	2137	12.1	3.7		2109	11.8	3.6
11	0428	0.9	0.3	26	0401	2.0	0.6
Su	0951	11.9	3.6	M	0922	11.7	3.6
	1647	0.6	0.2		1617	1.4	0.4
	2215	11.7	3.6		2151	11.7	3.6
12	0510	1.5	0.5	27	0443	2.3	0.7
M	1028	11.4	3.5	Tu	1004	11.4	3.5
	1731	1.2	0.4		1659	1.7	0.5
	2256	11.3	3.4		2240	11.5	3.5
13	0557	2.2	0.7	28	0539	2.5	0.8
Tu	1110	11.0	3.4	W	1057	11.1	3.4
	1819	1.8	0.5		1803	1.9	0.6
	2339	10.9	3.3		2336	11.3	3.4
14	0648	2.6	0.8	29	0648	2.7	0.8
W	1155	10.5	3.2	Th	1158	10.6	3.2
	1912	2.2	0.7		1914	2.0	0.6
15	0032	10.6	3.2	30	0040	11.0	3.4
Th	0746	2.9	0.9	F	0757	2.5	0.8
	1251	10.1	3.1		1307	10.3	3.1
	2011	2.4	0.7		2023	1.9	0.6
				31	0150	11.0	3.4
				Sa	0902	2.0	0.6
					1421	10.3	3.1
					2127	1.5	0.5

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0301	11.2	3.4	16	0247	10.9	3.3
Su	1003	1.3	0.4	M	1000	2.0	0.6
	1534	10.6	3.2		1517	10.2	3.1
	2227	0.9	0.3		2221	2.0	0.6
2	0407	11.6	3.5	17	0344	11.0	3.4
M	1101	0.6	0.2	Tu	1053	1.6	0.5
	1639	11.2	3.4		1615	10.5	3.2
	2324	0.4	0.1		2315	1.8	0.5
3	0508	12.0	3.7	18	0439	11.2	3.4
Tu	1154	-0.1	0.0	W	1145	1.3	0.4
	1737	11.7	3.6		1708	10.7	3.3
4	0017	0.0	0.0	19	0005	1.7	0.5
W	0601	12.3	3.7	Th	0529	11.4	3.5
	1244	-0.5	-0.2		1233	1.0	0.3
	1830	12.0	3.7		1759	11.0	3.4
5	0106	-0.1	0.0	20	0054	1.6	0.5
Th	0649	12.4	3.8	F	0617	11.5	3.5
	1331	-0.7	-0.2		1318	0.8	0.2
	1916	12.2	3.7		1847	11.3	3.4
6	0153	0.0	0.0	21	0141	1.6	0.5
F	0731	12.4	3.8	Sa	0702	11.6	3.5
	1417	-0.6	-0.2		1403	0.8	0.2
	1959	12.2	3.7		1931	11.5	3.5
7	0239	0.3	0.1	22	0226	1.6	0.5
Sa	0811	12.1	3.7	Su	0744	11.6	3.5
	1459	-0.3	-0.1		1447	0.8	0.2
	2037	12.0	3.7		2015	11.7	3.6
8	0322	0.8	0.2	23	0311	1.7	0.5
Su	0849	11.8	3.6	M	0828	11.5	3.5
	1543	0.2	0.1		1530	0.9	0.3
	2115	11.8	3.6		2059	11.8	3.6
9	0406	1.3	0.4	24	0358	1.8	0.5
M	0925	11.4	3.5	Tu	0912	11.4	3.5
	1624	0.8	0.2		1616	1.0	0.3
	2153	11.5	3.5		2147	11.8	3.6
10	0449	1.8	0.5	25	0448	1.9	0.6
Tu	1003	11.1	3.4	W	1001	11.3	3.4
	1705	1.3	0.4		1705	1.2	0.4
	2230	11.3	3.4		2236	11.8	3.6
11	0534	2.2	0.7	26	0539	2.0	0.6
W	1043	10.8	3.3	Th	1053	11.1	3.4
	1750	1.7	0.5		1758	1.3	0.4
	2313	11.2	3.4		2330	11.7	3.6
12	0621	2.5	0.8	27	0635	1.9	0.6
Th	1128	10.5	3.2	F	1150	10.9	3.3
	1837	2.0	0.6		1858	1.4	0.4
13	0000	11.0	3.4	28	0027	11.6	3.5
F	0714	2.6	0.8	Sa	0736	1.7	0.5
	1219	10.3	3.1		1253	10.7	3.3
	1932	2.2	0.7		1957	1.4	0.4
14	0053	10.9	3.3	29	0128	11.5	3.5
Sa	0809	2.6	0.8	Su	0835	1.4	0.4
	1314	10.1	3.1		1357	10.7	3.3
	2028	2.3	0.7		2058	1.3	0.4
15	0149	10.9	3.3	30	0232	11.5	3.5
Su	0905	2.4	0.7	M	0933	1.0	0.3
	1415	10.1	3.1		1504	10.8	3.3
	2126	2.2	0.7		2157	1.1	0.3

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0333	11.6	3.5	16	0254	11.1	3.4
Tu	1031	0.6	0.2	W	1010	2.0	0.6
	1607	11.0	3.4		1526	10.4	3.2
	2255	0.9	0.3		2234	2.5	0.8
2	0434	11.7	3.6	17	0350	11.0	3.4
W	1125	0.2	0.1	Th	1108	1.7	0.5
	1708	11.3	3.4		1626	10.5	3.2
	2348	0.7	0.2		2332	2.3	0.7
3	0529	11.7	3.6	18	0450	11.0	3.4
Th	1217	-0.1	0.0	F	1201	1.4	0.4
	1804	11.5	3.5		1727	10.7	3.3
4	0041	0.6	0.2	19	0027	2.1	0.6
F	0620	11.7	3.6	Sa	0545	11.0	3.4
	1307	-0.2	-0.1		1254	1.1	0.3
	1853	11.6	3.5		1822	11.0	3.4
5	0131	0.7	0.2	20	0120	1.9	0.6
Sa	0707	11.6	3.5	Su	0637	11.1	3.4
	1353	-0.2	-0.1		1344	0.8	0.2
	1939	11.6	3.5		1915	11.3	3.4
6	0219	0.9	0.3	21	0211	1.7	0.5
Su	0748	11.5	3.5	M	0731	11.3	3.4
	1439	0.1	0.0		1432	0.6	0.2
	2019	11.6	3.5		2006	11.7	3.6
7	0303	1.2	0.4	22	0301	1.4	0.4
M	0828	11.3	3.4	Tu	0819	11.4	3.5
	1521	0.4	0.1		1519	0.4	0.1
	2057	11.5	3.5		2055	12.0	3.7
8	0347	1.5	0.5	23	0348	1.3	0.4
Tu	0905	11.1	3.4	W	0908	11.6	3.5
	1603	0.7	0.2		1606	0.3	0.1
	2134	11.5	3.5		2140	12.2	3.7
9	0428	1.8	0.5	24	0436	1.1	0.3
W	0943	11.0	3.4	Th	0956	11.6	3.5
	1643	1.1	0.3		1654	0.4	0.1
	2211	11.5	3.5		2228	12.3	3.7
10	0510	2.0	0.6	25	0525	1.1	0.3
Th	1020	10.9	3.3	F	1045	11.6	3.5
	1723	1.4	0.4		1742	0.5	0.2
	2249	11.6	3.5		2318	12.3	3.7
11	0552	2.1	0.6	26	0616	1.0	0.3
F	1102	10.9	3.3	Sa	1136	11.5	3.5
	1802	1.7	0.5		1835	0.7	0.2
	2330	11.6	3.5				
12	0635	2.2	0.7	27	0007	12.2	3.7
Sa	1144	10.8	3.3	Su	0709	1.0	0.3
	1845	2.0	0.6		1231	11.3	3.4
					1930	1.0	0.3
13	0015	11.5	3.5	28	0101	12.0	3.7
Su	0725	2.3	0.7	M	0804	1.0	0.3
	1235	10.7	3.3		1328	11.0	3.4
	1936	2.2	0.7		2027	1.2	0.4
14	0104	11.4	3.5	29	0157	11.7	3.6
M	0817	2.3	0.7	Tu	0901	1.0	0.3
	1328	10.5	3.2		1428	10.8	3.3
	2034	2.4	0.7		2126	1.4	0.4
15	0156	11.3	3.4	30	0257	11.4	3.5
Tu	0914	2.2	0.7	W	0959	0.9	0.3
	1426	10.4	3.2		1532	10.7	3.3
	2133	2.5	0.8		2224	1.5	0.5
				31	0357	11.1	3.4
				Th	1055	0.8	0.2
					1636	10.7	3.3
					2322	1.5	0.5

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
Seasonal variations in sea level have not been included in these predictions.

BUENAVENTURA, COLOMBIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0443	13.6	4.1	16	0502	11.4	3.5
Th	1046	-1.2	-0.4	F	1056	0.7	0.2
	1718	13.7	4.2		1731	11.7	3.6
	2311	-0.1	0.0		2317	1.6	0.5
2	0533	13.7	4.2	17	0538	11.4	3.5
F	1135	-1.3	-0.4	Sa	1133	0.6	0.2
	1806	13.8	4.2		1806	11.8	3.6
					2353	1.4	0.4
3	0001	-0.2	-0.1	18	0612	11.4	3.5
Sa	0624	13.5	4.1	Su	1207	0.5	0.2
	1223	-1.1	-0.3		1839	11.8	3.6
	1856	13.7	4.2				
4	0052	0.0	0.0	19	0031	1.3	0.4
Su	0713	13.0	4.0	M	0646	11.2	3.4
	1310	-0.6	-0.2		1244	0.6	0.2
	1944	13.4	4.1		1912	11.7	3.6
5	0141	0.4	0.1	20	0108	1.3	0.4
M	0805	12.3	3.7	Tu	0721	11.0	3.4
	1358	0.1	0.0		1318	0.8	0.2
	2035	12.8	3.9		1945	11.6	3.5
6	0232	0.9	0.3	21	0147	1.3	0.4
Tu	0856	11.6	3.5	W	0758	10.7	3.3
	1446	1.0	0.3		1358	1.1	0.3
	2125	12.1	3.7		2022	11.4	3.5
7	0323	1.5	0.5	22	0230	1.4	0.4
W	0952	10.8	3.3	Th	0843	10.3	3.1
	1538	1.8	0.5		1443	1.5	0.5
	2220	11.5	3.5		2107	11.1	3.4
8	0418	2.1	0.6	23	0320	1.6	0.5
Th	1052	10.1	3.1	F	0936	9.9	3.0
	1633	2.6	0.8		1535	1.9	0.6
	2315	10.9	3.3		2204	10.9	3.3
9	0517	2.4	0.7	24	0418	1.7	0.5
F	1152	9.7	3.0	Sa	1044	9.7	3.0
	1729	3.1	0.9		1636	2.3	0.7
					2311	10.7	3.3
10	0015	10.6	3.2	25	0525	1.7	0.5
Sa	0618	2.6	0.8	Su	1203	9.8	3.0
	1255	9.7	3.0		1749	2.4	0.7
	1832	3.4	1.0				
11	0111	10.5	3.2	26	0026	10.8	3.3
Su	0719	2.5	0.8	M	0636	1.4	0.4
	1354	9.8	3.0		1319	10.3	3.1
	1932	3.4	1.0		1901	2.2	0.7
12	0207	10.6	3.2	27	0138	11.3	3.4
M	0812	2.2	0.7	Tu	0743	0.8	0.2
	1448	10.2	3.1		1423	11.1	3.4
	2028	3.1	0.9		2010	1.6	0.5
13	0257	10.8	3.3	28	0241	12.0	3.7
Tu	0900	1.8	0.5	W	0847	0.1	0.0
	1532	10.7	3.3		1521	12.1	3.7
	2116	2.7	0.8		2113	0.8	0.2
14	0342	11.1	3.4	29	0340	12.7	3.9
W	0942	1.3	0.4	Th	0942	-0.7	-0.2
	1615	11.1	3.4		1615	13.0	4.0
	2158	2.3	0.7		2209	0.0	0.0
15	0423	11.3	3.4	30	0432	13.2	4.0
Th	1019	1.0	0.3	F	1033	-1.2	-0.4
	1655	11.4	3.5		1704	13.6	4.1
	2238	2.0	0.6		2259	-0.5	-0.2
				31	0521	13.5	4.1
				Sa	1120	-1.5	-0.5
					1750	13.9	4.2
					2346	-0.8	-0.2

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0608	13.5	4.1	16	0552	11.6	3.5
Su	1207	-1.4	-0.4	M	1145	0.0	0.0
	1835	13.9	4.2		1812	12.2	3.7
2	0031	-0.7	-0.2	17	0007	0.3	0.1
M	0654	13.1	4.0	Tu	0625	11.6	3.5
	1249	-1.0	-0.3		1220	0.0	0.0
	1918	13.5	4.1		1844	12.2	3.7
3	0116	-0.4	-0.1	18	0044	0.2	0.1
Tu	0739	12.4	3.8	W	0700	11.4	3.5
	1331	-0.3	-0.1		1256	0.2	0.1
	2003	12.8	3.9		1916	12.0	3.7
4	0201	0.2	0.1	19	0121	0.3	0.1
W	0824	11.5	3.5	Th	0737	11.1	3.4
	1413	0.6	0.2		1334	0.5	0.2
	2048	12.0	3.7		1955	11.7	3.6
5	0245	1.0	0.3	20	0203	0.5	0.2
Th	0912	10.6	3.2	F	0819	10.6	3.2
	1459	1.5	0.5		1416	1.0	0.3
	2135	11.1	3.4		2039	11.3	3.4
6	0333	1.7	0.5	21	0251	0.9	0.3
F	1005	9.8	3.0	Sa	0912	10.1	3.1
	1545	2.5	0.8		1507	1.6	0.5
	2226	10.3	3.1		2133	10.8	3.3
7	0426	2.4	0.7	22	0349	1.3	0.4
Sa	1107	9.1	2.8	Su	1018	9.7	3.0
	1640	3.2	1.0		1611	2.2	0.7
	2327	9.7	3.0		2244	10.3	3.1
8	0527	2.8	0.9	23	0458	1.6	0.5
Su	1213	8.9	2.7	M	1140	9.6	2.9
	1744	3.7	1.1		1727	2.5	0.8
9	0032	9.4	2.9	24	0006	10.3	3.1
M	0632	2.9	0.9	Tu	0613	1.6	0.5
	1320	9.0	2.7		1259	10.0	3.0
	1855	3.7	1.1		1845	2.3	0.7
10	0135	9.5	2.9	25	0125	10.7	3.3
Tu	0735	2.6	0.8	W	0727	1.1	0.3
	1418	9.5	2.9		1408	10.9	3.3
	1959	3.4	1.0		1959	1.6	0.5
11	0231	9.9	3.0	26	0231	11.5	3.5
W	0831	2.1	0.6	Th	0833	0.3	0.1
	1510	10.1	3.1		1508	12.0	3.7
	2055	2.8	0.9		2102	0.6	0.2
12	0321	10.4	3.2	27	0327	12.3	3.7
Th	0918	1.5	0.5	F	0929	-0.5	-0.2
	1553	10.8	3.3		1558	12.9	3.9
	2140	2.2	0.7		2156	-0.2	-0.1
13	0403	10.9	3.3	28	0417	12.9	3.9
F	0958	1.0	0.3	Sa	1017	-1.1	-0.3
	1631	11.3	3.4		1645	13.5	4.1
	2219	1.5	0.5		2243	-0.8	-0.2
14	0443	11.2	3.4				
Sa	1035	0.5	0.2				
	1707	11.8	3.6				
	2256	1.0	0.3				
15	0519	11.5	3.5				
Su	1110	0.2	0.1				
	1740	12.0	3.7				
	2333	0.6	0.2				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0504	13.3	4.1	16	0452	11.7	3.6
Su	1101	-1.4	-0.4	M	1043	0.1	0.0
	1728	13.8	4.2		1710	12.4	3.8
	2327	-1.1	-0.3		2306	-0.1	0.0
2	0548	13.3	4.1	17	0527	11.9	3.6
M	1143	-1.3	-0.4	Tu	1119	-0.2	-0.1
	1810	13.8	4.2		1745	12.6	3.8
					2342	-0.4	-0.1
3	0009	-1.1	-0.3	18	0603	12.0	3.7
Tu	0631	12.9	3.9	W	1155	-0.2	-0.1
	1223	-0.9	-0.3		1817	12.6	3.8
	1849	13.3	4.1				
4	0048	-0.7	-0.2	19	0020	-0.5	-0.2
W	0711	12.3	3.7	Th	0639	11.9	3.6
	1301	-0.2	-0.1		1233	0.0	0.0
	1929	12.6	3.8		1854	12.4	3.8
5	0129	-0.1	0.0	20	0100	-0.3	-0.1
Th	0752	11.5	3.5	F	0718	11.5	3.5
	1341	0.6	0.2		1313	0.4	0.1
	2009	11.8	3.6		1934	12.0	3.7
6	0209	0.7	0.2	21	0142	0.1	0.0
F	0834	10.5	3.2	Sa	0803	11.0	3.4
	1419	1.5	0.5		1401	1.0	0.3
	2051	10.8	3.3		2019	11.4	3.5
7	0251	1.5	0.5	22	0232	0.6	0.2
Sa	0922	9.7	3.0	Su	0859	10.5	3.2
	1504	2.5	0.8		1454	1.7	0.5
	2138	9.9	3.0		2119	10.7	3.3
8	0339	2.3	0.7	23	0331	1.2	0.4
Su	1020	8.9	2.7	M	1008	10.0	3.0
	1557	3.3	1.0		1559	2.3	0.7
	2237	9.2	2.8		2234	10.2	3.1
9	0437	2.8	0.9	24	0441	1.7	0.5
M	1130	8.6	2.6	Tu	1128	9.9	3.0
	1700	3.8	1.2		1716	2.6	0.8
	2350	8.8	2.7		2357	10.1	3.1
10	0543	3.1	0.9	25	0557	1.8	0.5
Tu	1243	8.7	2.7	W	1245	10.3	3.1
	1816	3.9	1.2		1837	2.3	0.7
11	0102	8.9	2.7	26	0111	10.6	3.2
W	0653	2.9	0.9	Th	0711	1.4	0.4
	1346	9.2	2.8		1351	11.2	3.4
	1927	3.5	1.1		1948	1.5	0.5
12	0202	9.4	2.9	27	0217	11.3	3.4
Th	0756	2.4	0.7	F	0815	0.7	0.2
	1439	9.9	3.0		1447	12.1	3.7
	2025	2.8	0.9		2050	0.6	0.2
13	0252	10.0	3.0	28	0311	12.1	3.7
F	0845	1.8	0.5	Sa	0908	0.0	0.0
	1522	10.7	3.3		1537	12.9	3.9
	2113	1.9	0.6		2137	-0.2	-0.1
14	0337	10.7	3.3	29	0359	12.7	3.9
Sa	0927	1.1	0.3	Su	0955	-0.5	-0.2
	1601	11.4	3.5		1621	13.4	4.1
	2153	1.1	0.3		2222	-0.7	-0.2
15	0415	11.3	3.4	30	0444	13.0	4.0
Su	1006	0.5	0.2	M	1038	-0.7	-0.2
	1636	12.0	3.7		1702	13.6	4.1
	2229	0.5	0.2		2303	-0.9	-0.3
				31	0526	13.0	4.0
				Tu	1117	-0.6	-0.2
					1741	13.5	4.1
					2341	-0.9	-0.3

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BUENAVENTURA, COLOMBIA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0604	12.7	3.9	16	0541	12.5	3.8
W	1155	-0.2	-0.1	Th	1132	0.0	0.0
	1820	13.0	4.0		1754	13.1	4.0
					2359	-0.7	-0.2
2	0018	-0.5	-0.2	17	0622	12.4	3.8
Th	0644	12.1	3.7	F	1215	0.2	0.1
	1231	0.3	0.1		1834	12.8	3.9
	1857	12.4	3.8				
3	0055	0.1	0.0	18	0041	-0.5	-0.2
F	0721	11.4	3.5	Sa	0707	12.1	3.7
	1308	1.1	0.3		1300	0.6	0.2
	1932	11.6	3.5		1920	12.3	3.7
4	0134	0.8	0.2	19	0129	0.0	0.0
Sa	0801	10.6	3.2	Su	0755	11.6	3.5
	1347	1.9	0.6		1350	1.2	0.4
	2011	10.7	3.3		2011	11.6	3.5
5	0214	1.5	0.5	20	0221	0.6	0.2
Su	0846	9.9	3.0	M	0854	11.1	3.4
	1430	2.7	0.8		1446	1.8	0.5
	2056	9.9	3.0		2115	10.9	3.3
6	0259	2.2	0.7	21	0320	1.3	0.4
M	0939	9.3	2.8	Tu	1002	10.7	3.3
	1520	3.4	1.0		1552	2.3	0.7
	2152	9.1	2.8		2229	10.5	3.2
7	0352	2.8	0.9	22	0428	1.8	0.5
Tu	1045	8.9	2.7	W	1116	10.7	3.3
	1624	3.8	1.2		1708	2.5	0.8
	2305	8.7	2.7		2345	10.4	3.2
8	0457	3.2	1.0	23	0540	1.9	0.6
W	1157	9.0	2.7	Th	1226	11.0	3.4
	1735	3.9	1.2		1822	2.2	0.7
9	0019	8.8	2.7	24	0055	10.7	3.3
Th	0606	3.2	1.0	F	0650	1.7	0.5
	1303	9.4	2.9		1328	11.6	3.5
	1847	3.5	1.1		1930	1.6	0.5
10	0125	9.3	2.8	25	0156	11.3	3.4
F	0710	2.7	0.8	Sa	0751	1.3	0.4
	1356	10.1	3.1		1423	12.3	3.7
	1946	2.8	0.9		2028	0.9	0.3
11	0217	10.0	3.0	26	0249	11.9	3.6
Sa	0804	2.1	0.6	Su	0844	0.9	0.3
	1441	10.9	3.3		1510	12.8	3.9
	2034	1.9	0.6		2116	0.3	0.1
12	0303	10.7	3.3	27	0337	12.3	3.7
Su	0849	1.5	0.5	M	0929	0.6	0.2
	1521	11.7	3.6		1555	13.2	4.0
	2118	1.0	0.3		2158	-0.1	0.0
13	0345	11.4	3.5	28	0420	12.6	3.8
M	0932	0.8	0.2	Tu	1011	0.5	0.2
	1602	12.3	3.7		1635	13.2	4.0
	2158	0.2	0.1		2238	-0.2	-0.1
14	0425	11.9	3.6	29	0501	12.6	3.8
Tu	1011	0.4	0.1	W	1048	0.5	0.2
	1638	12.8	3.9		1715	13.1	4.0
	2238	-0.3	-0.1		2314	-0.2	-0.1
15	0502	12.3	3.7	30	0541	12.3	3.7
W	1052	0.1	0.0	Th	1126	0.8	0.2
	1715	13.0	4.0		1751	12.7	3.9
	2317	-0.7	-0.2		2351	0.1	0.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0618	12.0	3.7	16	0609	12.9	3.9
F	1204	1.2	0.4	Sa	1200	0.5	0.2
	1827	12.1	3.7		1822	13.2	4.0
2	0027	0.5	0.2	17	0028	-0.5	-0.2
Sa	0657	11.5	3.5	Su	0657	12.7	3.9
	1241	1.8	0.5		1249	0.8	0.2
	1905	11.5	3.5		1912	12.7	3.9
3	0105	1.1	0.3	18	0118	-0.1	0.0
Su	0736	10.9	3.3	M	0750	12.4	3.8
	1321	2.3	0.7		1342	1.3	0.4
	1942	10.8	3.3		2006	12.1	3.7
4	0142	1.6	0.5	19	0211	0.5	0.2
M	0819	10.4	3.2	Tu	0848	12.0	3.7
	1403	2.9	0.9		1440	1.8	0.5
	2024	10.1	3.1		2109	11.5	3.5
5	0227	2.2	0.7	20	0307	1.2	0.4
Tu	0907	9.9	3.0	W	0949	11.7	3.6
	1454	3.4	1.0		1544	2.2	0.7
	2115	9.5	2.9		2216	11.0	3.4
6	0317	2.8	0.9	21	0410	1.7	0.5
W	1005	9.6	2.9	Th	1055	11.6	3.5
	1551	3.7	1.1		1653	2.3	0.7
	2221	9.1	2.8		2325	10.8	3.3
7	0413	3.1	0.9	22	0516	2.1	0.6
Th	1108	9.6	2.9	F	1200	11.7	3.6
	1654	3.7	1.1		1801	2.2	0.7
	2331	9.1	2.8				
8	0518	3.2	1.0	23	0032	10.9	3.3
F	1210	9.9	3.0	Sa	0621	2.1	0.6
	1759	3.4	1.0		1259	11.9	3.6
					1904	1.9	0.6
9	0037	9.5	2.9	24	0132	11.2	3.4
Sa	0618	3.0	0.9	Su	0720	2.1	0.6
	1306	10.5	3.2		1354	12.2	3.7
	1859	2.8	0.9		2000	1.5	0.5
10	0133	10.0	3.0	25	0225	11.5	3.5
Su	0715	2.5	0.8	M	0813	1.9	0.6
	1356	11.2	3.4		1442	12.5	3.8
	1952	2.0	0.6		2049	1.1	0.3
11	0223	10.8	3.3	26	0313	11.8	3.6
M	0807	1.9	0.6	Tu	0900	1.8	0.5
	1441	11.9	3.6		1527	12.7	3.9
	2041	1.1	0.3		2132	0.8	0.2
12	0310	11.5	3.5	27	0358	12.0	3.7
Tu	0855	1.3	0.4	W	0942	1.7	0.5
	1524	12.6	3.8		1609	12.7	3.9
	2127	0.3	0.1		2211	0.7	0.2
13	0355	12.1	3.7	28	0440	12.1	3.7
W	0942	0.8	0.2	Th	1022	1.7	0.5
	1607	13.1	4.0		1648	12.6	3.8
	2211	-0.3	-0.1		2248	0.6	0.2
14	0438	12.6	3.8	29	0519	12.0	3.7
Th	1027	0.5	0.2	F	1102	1.8	0.5
	1651	13.4	4.1		1726	12.3	3.7
	2255	-0.6	-0.2		2325	0.7	0.2
15	0523	12.9	3.9	30	0559	11.9	3.6
F	1113	0.4	0.1	Sa	1141	2.0	0.6
	1736	13.4	4.1		1804	11.9	3.6
	2341	-0.7	-0.2				
				31	0002	1.0	0.3
				Su	0636	11.6	3.5
					1220	2.3	0.7
					1841	11.5	3.5

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0039	1.3	0.4	16	0105	-0.3	-0.1
M	0713	11.3	3.4	Tu	0739	13.2	4.0
	1300	2.6	0.8		1334	0.9	0.3
	1918	11.0	3.4		1958	12.7	3.9
2	0118	1.7	0.5	17	0157	0.3	0.1
Tu	0753	11.0	3.4	W	0832	12.9	3.9
	1342	2.9	0.9		1429	1.3	0.4
	1958	10.5	3.2		2054	12.1	3.7
3	0201	2.1	0.6	18	0251	0.9	0.3
W	0838	10.7	3.3	Th	0930	12.5	3.8
	1427	3.2	1.0		1525	1.7	0.5
	2043	10.1	3.1		2153	11.5	3.5
4	0243	2.5	0.8	19	0347	1.6	0.5
Th	0923	10.5	3.2	F	1028	12.2	3.7
	1517	3.3	1.0		1627	2.1	0.6
	2138	9.7	3.0		2258	11.0	3.4
5	0333	2.8	0.9	20	0446	2.2	0.7
F	1016	10.4	3.2	Sa	1128	11.9	3.6
	1613	3.3	1.0		1730	2.3	0.7
	2238	9.6	2.9				
6	0429	3.0	0.9	21	0002	10.8	3.3
Sa	1113	10.5	3.2	Su	0546	2.6	0.8
	1712	3.1	0.9		1226	11.8	3.6
	2343	9.7	3.0		1830	2.3	0.7
7	0529	3.0	0.9	22	0101	10.8	3.3
Su	1211	10.9	3.3	M	0647	2.8	0.9
	1811	2.7	0.8		1321	11.8	3.6
					1930	2.1	0.6
8	0045	10.1	3.1	23	0157	10.9	3.3
M	0629	2.7	0.8	Tu	0740	2.8	0.9
	1306	11.4	3.5		1412	11.8	3.6
	1911	2.0	0.6		2020	1.9	0.6
9	0143	10.7	3.3	24	0249	11.1	3.4
Tu	0725	2.3	0.7	W	0833	2.8	0.9
	1359	12.0	3.7		1502	11.9	3.6
	2004	1.3	0.4		2105	1.6	0.5
10	0236	11.4	3.5	25	0335	11.4	3.5
W	0821	1.8	0.5	Th	0918	2.6	0.8
	1452	12.6	3.8		1545	12.0	3.7
	2057	0.6	0.2		2147	1.4	0.4
11	0329	12.1	3.7	26	0419	11.6	3.5
Th	0914	1.3	0.4	F	1003	2.5	0.8
	1542	13.1	4.0		1627	12.0	3.7
	2147	-0.1	0.0		2226	1.2	0.4
12	0417	12.7	3.9	27	0459	11.8	3.6
F	1007	0.9	0.3	Sa	1043	2.4	0.7
	1632	13.5	4.1		1707	12.0	3.7
	2236	-0.5	-0.2		2304	1.1	0.3
13	0507	13.2	4.0	28	0539	11.8	3.6
Sa	1058	0.6	0.2	Su	1121	2.3	0.7
	1721	13.6	4.1		1744	11.8	3.6
	2325	-0.7	-0.2		2341	1.1	0.3
14	0556	13.4	4.1	29	0616	11.8	3.6
Su	1148	0.5	0.2	M	1200	2.3	0.7
	1812	13.5	4.1		1821	11.6	3.5
15	0015	-0.6	-0.2	30	0017	1.3	0.4
M	0646	13.4	4.1	Tu	0652	11.7	3.6
	1241	0.6	0.2		1239	2.3	0.7
	1903	13.2	4.0		1857	11.3	3.4

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BUENAVENTURA, COLOMBIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0054	1.5	0.5	16	0137	-0.1	0.0
W	0729	11.5	3.5	Th	0809	13.5	4.1
	1318	2.4	0.7		1408	0.7	0.2
	1934	11.0	3.4		2032	12.4	3.8
2	0131	1.7	0.5	17	0227	0.6	0.2
Th	0806	11.3	3.4	F	0900	12.9	3.9
	1358	2.6	0.8		1459	1.3	0.4
	2014	10.6	3.2		2125	11.7	3.6
3	0213	2.0	0.6	18	0315	1.5	0.5
F	0843	11.2	3.4	Sa	0954	12.2	3.7
	1443	2.7	0.8		1552	1.9	0.6
	2059	10.3	3.1		2223	10.9	3.3
4	0254	2.3	0.7	19	0409	2.3	0.7
Sa	0927	11.0	3.4	Su	1050	11.6	3.5
	1531	2.7	0.8		1650	2.4	0.7
	2151	10.0	3.0		2324	10.4	3.2
5	0346	2.6	0.8	20	0505	3.0	0.9
Su	1018	11.0	3.4	M	1149	11.2	3.4
	1627	2.7	0.8		1751	2.7	0.8
	2250	9.9	3.0				
6	0441	2.8	0.9	21	0028	10.1	3.1
M	1119	11.0	3.4	Tu	0605	3.4	1.0
	1728	2.5	0.8		1250	10.9	3.3
					1855	2.8	0.9
7	0000	10.1	3.1	22	0128	10.2	3.1
Tu	0545	2.8	0.9	W	0709	3.5	1.1
	1224	11.3	3.4		1346	11.0	3.4
	1832	2.1	0.6		1951	2.6	0.8
8	0106	10.5	3.2	23	0225	10.4	3.2
W	0650	2.6	0.8	Th	0807	3.4	1.0
	1327	11.7	3.6		1437	11.1	3.4
	1933	1.5	0.5		2042	2.3	0.7
9	0210	11.2	3.4	24	0315	10.8	3.3
Th	0754	2.1	0.6	F	0900	3.1	0.9
	1425	12.3	3.7		1524	11.4	3.5
	2033	0.8	0.2		2126	1.9	0.6
10	0305	12.0	3.7	25	0358	11.3	3.4
F	0855	1.5	0.5	Sa	0942	2.7	0.8
	1524	13.0	4.0		1609	11.6	3.5
	2129	0.1	0.0		2206	1.5	0.5
11	0401	12.8	3.9	26	0440	11.6	3.5
Sa	0951	0.9	0.3	Su	1024	2.4	0.7
	1617	13.5	4.1		1648	11.8	3.6
	2221	-0.5	-0.2		2243	1.2	0.4
12	0452	13.4	4.1	27	0517	11.9	3.6
Su	1044	0.4	0.1	M	1102	2.0	0.6
	1709	13.8	4.2		1725	11.8	3.6
	2312	-0.8	-0.2		2320	1.0	0.3
13	0542	13.9	4.2	28	0553	12.0	3.7
M	1136	0.1	0.0	Tu	1139	1.8	0.5
	1759	13.9	4.2		1800	11.8	3.6
					2354	1.0	0.3
14	0001	-0.9	-0.3	29	0625	12.1	3.7
Tu	0631	14.0	4.3	W	1215	1.7	0.5
	1227	0.1	0.0		1834	11.6	3.5
	1849	13.6	4.1				
15	0049	-0.6	-0.2	30	0029	1.1	0.3
W	0721	13.9	4.2	Th	0657	12.0	3.7
	1316	0.3	0.1		1252	1.7	0.5
	1939	13.1	4.0		1908	11.4	3.5
				31	0104	1.2	0.4
				F	0729	11.8	3.6
					1329	1.7	0.5
					1944	11.1	3.4

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0141	1.5	0.5	16	0242	1.5	0.5
Sa	0806	11.6	3.5	Su	0915	11.9	3.6
	1409	1.9	0.6		1515	1.8	0.5
	2022	10.7	3.3		2146	10.7	3.3
2	0222	1.9	0.6	17	0330	2.5	0.8
Su	0846	11.4	3.5	M	1010	11.1	3.4
	1454	2.1	0.6		1607	2.5	0.8
	2109	10.4	3.2		2245	9.9	3.0
3	0307	2.3	0.7	18	0424	3.3	1.0
M	0933	11.1	3.4	Tu	1110	10.4	3.2
	1548	2.3	0.7		1707	3.1	0.9
	2210	10.0	3.0		2353	9.6	2.9
4	0405	2.6	0.8	19	0528	3.8	1.2
Tu	1037	10.9	3.3	W	1216	10.1	3.1
	1650	2.3	0.7		1814	3.3	1.0
	2321	10.0	3.0				
5	0512	2.8	0.9	20	0102	9.6	2.9
W	1149	10.9	3.3	Th	0637	4.0	1.2
	1759	2.2	0.7		1319	10.1	3.1
					1919	3.1	0.9
6	0039	10.3	3.1	21	0159	10.0	3.0
Th	0625	2.7	0.8	F	0743	3.7	1.1
	1303	11.3	3.4		1415	10.4	3.2
	1909	1.7	0.5		2017	2.7	0.8
7	0149	11.0	3.4	22	0250	10.5	3.2
F	0735	2.2	0.7	Sa	0839	3.2	1.0
	1410	12.0	3.7		1503	10.9	3.3
	2015	1.0	0.3		2102	2.1	0.6
8	0250	11.9	3.6	23	0334	11.1	3.4
Sa	0841	1.5	0.5	Su	0921	2.6	0.8
	1510	12.7	3.9		1547	11.4	3.5
	2113	0.1	0.0		2142	1.6	0.5
9	0345	12.9	3.9	24	0414	11.7	3.6
Su	0938	0.6	0.2	M	1003	2.0	0.6
	1604	13.4	4.1		1627	11.7	3.6
	2206	-0.6	-0.2		2219	1.2	0.4
10	0436	13.7	4.2	25	0449	12.1	3.7
M	1032	-0.1	0.0	Tu	1038	1.5	0.5
	1654	13.9	4.2		1702	12.0	3.7
	2255	-1.0	-0.3		2254	0.8	0.2
11	0524	14.2	4.3	26	0524	12.3	3.7
Tu	1121	-0.5	-0.2	W	1114	1.1	0.3
	1743	14.1	4.3		1737	12.1	3.7
	2342	-1.1	-0.3		2327	0.7	0.2
12	0609	14.4	4.4	27	0555	12.4	3.8
W	1207	-0.6	-0.2	Th	1149	0.9	0.3
	1830	13.9	4.2		1809	12.0	3.7
13	0027	-0.9	-0.3	28	0001	0.7	0.2
Th	0656	14.1	4.3	F	0627	12.4	3.8
	1253	-0.3	-0.1		1223	0.9	0.3
	1916	13.3	4.1		1841	11.8	3.6
14	0112	-0.3	-0.1	29	0036	0.9	0.3
F	0742	13.6	4.1	Sa	0657	12.2	3.7
	1339	0.2	0.1		1259	1.0	0.3
	2003	12.5	3.8		1916	11.5	3.5
15	0155	0.6	0.2	30	0113	1.2	0.4
Sa	0827	12.8	3.9	Su	0732	11.9	3.6
	1426	1.0	0.3		1339	1.2	0.4
	2053	11.6	3.5		1955	11.1	3.4
				31	0153	1.6	0.5
				M	0814	11.6	3.5
					1423	1.6	0.5
					2042	10.6	3.2

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0240	2.1	0.6	16	0346	3.6	1.1
Tu	0903	11.1	3.4	W	1029	9.8	3.0
	1519	2.0	0.6		1623	3.3	1.0
	2141	10.1	3.1		2315	9.3	2.8
2	0339	2.6	0.8	17	0450	4.1	1.2
W	1008	10.7	3.3	Th	1139	9.4	2.9
	1623	2.3	0.7		1729	3.6	1.1
	2300	10.0	3.0				
3	0451	3.0	0.9	18	0025	9.4	2.9
Th	1129	10.5	3.2	F	0604	4.2	1.3
	1737	2.3	0.7		1248	9.5	2.9
					1840	3.5	1.1
4	0021	10.3	3.1	19	0127	9.8	3.0
F	0610	2.8	0.9	Sa	0714	3.8	1.2
	1250	10.9	3.3		1348	10.0	3.0
	1851	1.9	0.6		1941	3.0	0.9
5	0135	11.1	3.4	20	0220	10.5	3.2
Sa	0725	2.2	0.7	Su	0810	3.1	0.9
	1359	11.7	3.6		1436	10.6	3.2
	1959	1.1	0.3		2031	2.4	0.7
6	0234	12.1	3.7	21	0303	11.2	3.4
Su	0829	1.2	0.4	M	0855	2.4	0.7
	1457	12.6	3.8		1521	11.2	3.4
	2057	0.3	0.1		2110	1.8	0.5
7	0329	13.1	4.0	22	0342	11.8	3.6
M	0926	0.3	0.1	Tu	0934	1.6	0.5
	1550	13.4	4.1		1558	11.8	3.6
	2148	-0.5	-0.2		2150	1.2	0.4
8	0417	13.9	4.2	23	0417	12.3	3.7
Tu	1014	-0.5	-0.2	W	1011	1.0	0.3
	1638	13.9	4.2		1635	12.1	3.7
	2236	-0.9	-0.3		2225	0.9	0.3
9	0501	14.4	4.4	24	0451	12.6	3.8
W	1100	-0.9	-0.3	Th	1046	0.6	0.2
	1723	14.1	4.3		1709	12.3	3.7
	2319	-1.0	-0.3		2300	0.6	0.2
10	0545	14.4	4.4	25	0523	12.8	3.9
Th	1144	-0.9	-0.3	F	1121	0.3	0.1
	1807	13.8	4.2		1742	12.3	3.7
					2335	0.6	0.2
11	0000	-0.7	-0.2	26	0555	12.8	3.9
F	0627	14.1	4.3	Sa	1156	0.3	0.1
	1227	-0.6	-0.2		1817	12.2	3.7
	1850	13.2	4.0				
12	0041	-0.1	0.0	27	0011	0.8	0.2
Sa	0709	13.4	4.1	Su	0630	12.6	3.8
	1308	0.1	0.0		1234	0.4	0.1
	1933	12.4	3.8		1852	11.9	3.6
13	0123	0.8	0.2	28	0049	1.1	0.3
Su	0751	12.5	3.8	M	0707	12.2	3.7
	1350	0.9	0.3		1316	0.7	0.2
	2019	11.5	3.5		1935	11.4	3.5
14	0206	1.8	0.5	29	0131	1.6	0.5
M	0837	11.5	3.5	Tu	0750	11.7	3.6
	1435	1.8	0.5		1401	1.3	0.4
	2109	10.5	3.2		2027	10.9	3.3
15	0251	2.7	0.8	30	0221	2.2	0.7
Tu	0927	10.5	3.2	W	0845	11.0	3.4
	1523	2.7	0.8		1458	1.8	0.5
	2205	9.7	3.0		2128	10.4	3.2

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BUENAVENTURA, COLOMBIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0325	2.7	0.8	16	0413	4.2	1.3
Th	0956	10.5	3.2	F	1057	9.2	2.8
	1605	2.3	0.7		1645	3.7	1.1
	2249	10.3	3.1		2343	9.5	2.9
2	0441	3.0	0.9	17	0525	4.2	1.3
F	1121	10.4	3.2	Sa	1209	9.3	2.8
	1720	2.4	0.7		1751	3.7	1.1
3	0008	10.6	3.2	18	0045	9.9	3.0
Sa	0600	2.7	0.8	Su	0632	3.8	1.2
	1240	10.8	3.3		1311	9.7	3.0
	1835	2.0	0.6		1855	3.3	1.0
4	0117	11.4	3.5	19	0138	10.5	3.2
Su	0714	2.0	0.6	M	0730	3.1	0.9
	1346	11.7	3.6		1402	10.4	3.2
	1941	1.4	0.4		1948	2.8	0.9
5	0215	12.4	3.8	20	0225	11.2	3.4
M	0815	1.1	0.3	Tu	0817	2.3	0.7
	1441	12.5	3.8		1447	11.1	3.4
	2039	0.6	0.2		2033	2.1	0.6
6	0308	13.3	4.1	21	0305	11.9	3.6
Tu	0908	0.2	0.1	W	0900	1.5	0.5
	1532	13.2	4.0		1529	11.7	3.6
	2129	0.0	0.0		2114	1.6	0.5
7	0353	13.9	4.2	22	0342	12.4	3.8
W	0955	-0.5	-0.2	Th	0937	0.8	0.2
	1617	13.7	4.2		1606	12.2	3.7
	2212	-0.3	-0.1		2153	1.1	0.3
8	0437	14.2	4.3	23	0419	12.8	3.9
Th	1038	-0.8	-0.2	F	1017	0.3	0.1
	1702	13.8	4.2		1643	12.5	3.8
	2254	-0.3	-0.1		2231	0.8	0.2
9	0517	14.2	4.3	24	0453	13.1	4.0
F	1118	-0.8	-0.2	Sa	1054	0.0	0.0
	1743	13.5	4.1		1719	12.6	3.8
	2335	0.0	0.0		2310	0.7	0.2
10	0558	13.7	4.2	25	0529	13.1	4.0
Sa	1158	-0.4	-0.1	Su	1133	-0.1	0.0
	1824	13.0	4.0		1758	12.6	3.8
					2351	0.8	0.2
11	0012	0.5	0.2	26	0608	12.9	3.9
Su	0639	13.0	4.0	M	1215	0.1	0.0
	1237	0.2	0.1		1839	12.3	3.7
	1905	12.3	3.7				
12	0053	1.3	0.4	27	0033	1.1	0.3
M	0717	12.2	3.7	Tu	0651	12.4	3.8
	1316	1.0	0.3		1300	0.4	0.1
	1945	11.4	3.5		1924	11.9	3.6
13	0134	2.1	0.6	28	0121	1.6	0.5
Tu	0758	11.2	3.4	W	0739	11.8	3.6
	1358	1.8	0.5		1347	1.0	0.3
	2034	10.6	3.2		2019	11.5	3.5
14	0219	3.0	0.9	29	0216	2.1	0.6
W	0846	10.3	3.1	Th	0838	11.2	3.4
	1443	2.7	0.8		1446	1.6	0.5
	2128	9.9	3.0		2123	11.1	3.4
15	0312	3.7	1.1	30	0320	2.6	0.8
Th	0945	9.6	2.9	F	0949	10.7	3.3
	1539	3.3	1.0		1552	2.2	0.7
	2234	9.5	2.9		2237	11.0	3.4
				31	0431	2.8	0.9
				Sa	1109	10.6	3.2
					1703	2.4	0.7
					2349	11.2	3.4

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0547	2.5	0.8	16	0542	3.6	1.1
Su	1222	10.9	3.3	M	1222	9.5	2.9
	1814	2.2	0.7		1800	3.5	1.1
2	0055	11.8	3.6	17	0047	10.5	3.2
M	0656	1.9	0.6	Tu	0641	3.1	0.9
	1327	11.6	3.5		1319	10.0	3.0
	1919	1.7	0.5		1856	3.1	0.9
3	0151	12.5	3.8	18	0138	11.1	3.4
Tu	0756	1.1	0.3	W	0735	2.3	0.7
	1423	12.2	3.7		1408	10.7	3.3
	2015	1.2	0.4		1949	2.6	0.8
4	0242	13.2	4.0	19	0223	11.7	3.6
W	0847	0.4	0.1	Th	0821	1.6	0.5
	1511	12.8	3.9		1455	11.4	3.5
	2105	0.8	0.2		2036	2.0	0.6
5	0329	13.6	4.1	20	0305	12.3	3.7
Th	0932	-0.1	0.0	F	0905	0.8	0.2
	1558	13.1	4.0		1537	12.0	3.7
	2147	0.6	0.2		2121	1.5	0.5
6	0412	13.7	4.2	21	0347	12.8	3.9
F	1015	-0.3	-0.1	Sa	0950	0.2	0.1
	1641	13.2	4.0		1619	12.5	3.8
	2231	0.6	0.2		2206	1.1	0.3
7	0454	13.6	4.1	22	0427	13.1	4.0
Sa	1054	-0.2	-0.1	Su	1032	-0.2	-0.1
	1722	13.0	4.0		1700	12.8	3.9
	2310	0.8	0.2		2249	0.8	0.2
8	0533	13.2	4.0	23	0510	13.2	4.0
Su	1133	0.0	0.0	M	1115	-0.4	-0.1
	1801	12.7	3.9		1743	12.9	3.9
	2347	1.3	0.4		2335	0.8	0.2
9	0610	12.6	3.8	24	0555	13.1	4.0
M	1209	0.5	0.2	Tu	1201	-0.3	-0.1
	1841	12.1	3.7		1831	12.8	3.9
10	0028	1.8	0.5	25	0023	0.9	0.3
Tu	0649	11.9	3.6	W	0641	12.7	3.9
	1249	1.1	0.3		1248	0.0	0.0
	1921	11.5	3.5		1918	12.6	3.8
11	0108	2.4	0.7	26	0113	1.2	0.4
W	0729	11.1	3.4	Th	0734	12.2	3.7
	1329	1.8	0.5		1339	0.5	0.2
	2005	10.9	3.3		2014	12.3	3.7
12	0152	3.0	0.9	27	0209	1.6	0.5
Th	0814	10.4	3.2	F	0835	11.6	3.5
	1411	2.4	0.7		1435	1.1	0.3
	2054	10.4	3.2		2112	11.9	3.6
13	0240	3.5	1.1	28	0309	2.0	0.6
F	0907	9.8	3.0	Sa	0939	11.1	3.4
	1459	3.0	0.9		1536	1.7	0.5
	2149	10.0	3.0		2218	11.7	3.6
14	0336	3.8	1.2	29	0416	2.2	0.7
Sa	1009	9.3	2.8	Su	1049	10.9	3.3
	1557	3.4	1.0		1639	2.1	0.6
	2250	9.9	3.0		2324	11.7	3.6
15	0439	3.9	1.2	30	0525	2.2	0.7
Su	1118	9.3	2.8	M	1158	10.9	3.3
	1658	3.6	1.1		1745	2.3	0.7
	2351	10.1	3.1				

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0026	11.9	3.6	16	0549	2.9	0.9
Tu	0632	1.9	0.6	W	1226	9.6	2.9
	1303	11.2	3.4		1805	3.1	0.9
	1850	2.2	0.7				
2	0125	12.2	3.7	17	0045	10.8	3.3
W	0732	1.4	0.4	Th	0647	2.3	0.7
	1359	11.6	3.5		1325	10.1	3.1
	1949	2.0	0.6		1903	2.8	0.9
3	0217	12.5	3.8	18	0139	11.3	3.4
Th	0825	1.0	0.3	F	0743	1.7	0.5
	1450	12.0	3.7		1420	10.8	3.3
	2041	1.8	0.5		1959	2.3	0.7
4	0305	12.8	3.9	19	0231	11.9	3.6
F	0911	0.6	0.2	Sa	0834	0.9	0.3
	1538	12.3	3.7		1510	11.5	3.5
	2126	1.6	0.5		2053	1.7	0.5
5	0350	12.8	3.9	20	0321	12.4	3.8
Sa	0953	0.4	0.1	Su	0924	0.2	0.1
	1622	12.4	3.8		1558	12.2	3.7
	2208	1.5	0.5		2145	1.2	0.4
6	0432	12.8	3.9	21	0409	12.9	3.9
Su	1033	0.4	0.1	M	1014	-0.4	-0.1
	1704	12.4	3.8		1645	12.8	3.9
	2249	1.6	0.5		2235	0.7	0.2
7	0513	12.5	3.8	22	0457	13.2	4.0
M	1111	0.5	0.2	Tu	1101	-0.7	-0.2
	1743	12.3	3.7		1732	13.2	4.0
	2327	1.7	0.5		2325	0.4	0.1
8	0550	12.2	3.7	23	0546	13.3	4.1
Tu	1148	0.7	0.2	W	1148	-0.8	-0.2
	1822	12.0	3.7		1820	13.4	4.1
9	0007	2.0	0.6	24	0015	0.3	0.1
W	0628	11.7	3.6	Th	0635	13.1	4.0
	1225	1.0	0.3		1238	-0.6	-0.2
	1900	11.7	3.6		1909	13.3	4.1
10	0046	2.2	0.7	25	0105	0.4	0.1
Th	0707	11.2	3.4	F	0727	12.7	3.9
	1304	1.4	0.4		1326	-0.2	-0.1
	1939	11.3	3.4		2001	13.0	4.0
11	0128	2.6	0.8	26	0158	0.7	0.2
F	0747	10.6	3.2	Sa	0822	12.1	3.7
	1342	1.9	0.6		1419	0.4	0.1
	2019	10.9	3.3		2054	12.6	3.8
12	0211	2.9	0.9	27	0254	1.1	0.3
Sa	0830	10.1	3.1	Su	0920	11.5	3.5
	1424	2.4	0.7		1512	1.1	0.3
	2104	10.6	3.2		2152	12.2	3.7
13	0259	3.1	0.9	28	0352	1.5	0.5
Su	0920	9.7	3.0	M	1021	11.0	3.4
	1512	2.8	0.9		1610	1.8	0.5
	2152	10.4	3.2		2252	11.8	3.6
14	0351	3.2	1.0	29	0453	1.8	0.5
M	1016	9.4	2.9	Tu	1127	10.6	3.2
	1605	3.1	0.9		1713	2.3	0.7
	2248	10.3	3.1		2352	11.5	3.5
15	0447	3.2	1.0	30	0557	1.9	0.6
Tu	1121	9.4	2.9	W	1233	10.5	3.2
	1703	3.2	1.0		1815	2.6	0.8
	2347	10.4	3.2				
				31	0055	11.4	3.5
				Th	0701	1.9	0.6
					1336	10.6	3.2
					1919	2.7	0.8

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0414	16.9	5.2	16	0437	14.2	4.3
Th	1037	-1.5	-0.5	F	1051	0.7	0.2
	1652	16.8	5.1		1711	14.3	4.4
	2258	-0.3	-0.1		2311	1.8	0.5
2	0509	17.0	5.2	17	0515	14.3	4.4
F	1124	-1.7	-0.5	Sa	1126	0.5	0.2
	1746	17.1	5.2		1746	14.5	4.4
	2347	-0.4	-0.1		2346	1.6	0.5
3	0602	16.8	5.1	18	0552	14.4	4.4
Sa	1212	-1.4	-0.4	Su	1201	0.7	0.2
	1836	17.0	5.2		1817	14.7	4.5
4	0036	-0.1	0.0	19	0023	1.6	0.5
Su	0655	16.4	5.0	M	0626	14.3	4.4
	1300	-0.7	-0.2		1236	0.9	0.3
	1924	16.7	5.1		1849	14.7	4.5
5	0128	0.5	0.2	20	0102	1.8	0.5
M	0745	15.6	4.8	Tu	0700	14.0	4.3
	1351	0.3	0.1		1312	1.4	0.4
	2014	16.0	4.9		1924	14.6	4.5
6	0222	1.3	0.4	21	0142	2.0	0.6
Tu	0835	14.5	4.4	W	0739	13.6	4.1
	1445	1.4	0.4		1353	1.9	0.6
	2104	15.1	4.6		1958	14.3	4.4
7	0319	2.0	0.6	22	0227	2.3	0.7
W	0931	13.5	4.1	Th	0821	13.2	.0
	1538	2.4	0.7		1439	2.5	0.8
	2200	14.2	4.3		2040	14.0	4.3
8	0418	2.7	0.8	23	0317	2.6	0.8
Th	1033	12.6	3.8	F	0910	12.6	3.8
	1636	3.4	1.0		1531	3.0	0.9
	2257	13.5	4.1		2133	13.6	4.1
9	0515	3.2	1.0	24	0417	2.7	0.8
F	1142	12.0	3.7	Sa	1016	12.2	3.7
	1734	4.0	1.2		1631	3.4	1.0
					2242	13.4	4.1
10	0001	13.1	4.0	25	0521	2.7	0.8
Sa	0618	3.4	1.0	Su	1133	12.2	3.7
	1246	11.9	3.6		1741	3.4	1.0
	1837	4.3	1.3		2358	13.5	4.1
11	0057	13.0	4.0	26	0634	2.2	0.7
Su	0716	3.2	1.0	M	1246	12.8	3.9
	1343	12.1	3.7		1856	3.0	0.9
	1938	4.2	1.3				
12	0148	13.1	4.0	27	0108	14.1	4.3
M	0811	2.8	0.9	Tu	0743	1.3	0.4
	1433	12.5	3.8		1351	13.7	4.2
	2031	3.8	1.2		2007	2.1	0.6
13	0233	13.4	4.1	28	0210	14.8	4.5
Tu	0857	2.2	0.7	W	0844	0.2	0.1
	1516	13.0	4.0		1452	14.8	4.5
	2116	3.2	1.0		2106	0.9	0.3
14	0316	13.7	4.2	29	0309	15.6	4.8
W	0938	1.5	0.5	Th	0937	-0.9	-0.3
	1556	13.5	4.1		1548	15.8	4.8
	2157	2.6	0.8		2158	-0.2	-0.1
15	0358	14.0	4.3	30	0406	16.3	5.0
Th	1015	1.0	0.3	F	1025	-1.8	-0.5
	1633	13.9	4.2		1641	16.6	5.1
	2235	2.1	0.6		2246	-1.0	-0.3
				31	0458	16.6	5.1
				Sa	1109	-2.1	-0.6
					1730	17.1	5.2
					2332	-1.3	-0.4

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0549	16.7	5.1	16	0530	14.7	4.5
Su	1154	-2.0	-0.6	M	1137	-0.2	-0.1
	1815	17.1	5.2		1751	15.2	4.6
					2359	0.2	0.1
2	0017	-1.1	-0.3	17	0604	14.7	4.5
M	0636	16.3	5.0	Tu	1210	0.0	0.0
	1238	-1.3	-0.4		1822	15.3	4.7
	1900	16.8	5.1				
3	0102	-0.5	-0.2	18	0033	0.3	0.1
Tu	0720	15.5	4.7	W	0639	14.5	4.4
	1322	-0.3	-0.1		1247	0.4	0.1
	1942	16.0	4.9		1855	15.2	4.6
4	0149	0.4	0.1	19	0113	0.6	0.2
W	0803	14.4	4.4	Th	0715	14.2	4.3
	1408	0.9	0.3		1324	1.0	0.3
	2025	14.9	4.5		1931	14.8	4.5
5	0240	1.4	0.4	20	0157	1.1	0.3
Th	0850	13.2	4.0	F	0755	13.6	4.1
	1456	2.2	0.7		1409	1.8	0.5
	2110	13.8	4.2		2011	14.3	4.4
6	0331	2.4	0.7	21	0247	1.7	0.5
F	0940	12.0	3.7	Sa	0843	12.9	3.9
	1549	3.4	1.0		1502	2.6	0.8
	2202	12.7	3.9		2104	13.5	4.1
7	0429	3.2	1.0	22	0347	2.3	0.7
Sa	1048	11.1	3.4	Su	0947	12.1	3.7
	1648	4.3	1.3		1605	3.2	1.0
	2307	11.9	3.6		2213	12.9	3.9
8	0531	3.7	1.1	23	0457	2.6	0.8
Su	1204	10.8	3.3	M	1111	11.9	3.6
	1755	4.8	1.5		1722	3.5	1.1
					2339	12.7	3.9
9	0018	11.6	3.5	24	0613	2.4	0.7
M	0637	3.8	1.2	Tu	1234	12.4	3.8
	1314	11.0	3.4		1843	3.1	0.9
	1906	4.7	1.4				
10	0119	11.8	3.6	25	0058	13.2	4.0
Tu	0743	3.3	1.0	W	0727	1.6	0.5
	1410	11.6	3.5		1343	13.4	4.1
	2008	4.1	1.2		1956	2.0	0.6
11	0212	12.3	3.7	26	0204	14.2	4.3
W	0836	2.6	0.8	Th	0829	0.4	0.1
	1455	12.4	3.8		1441	14.6	4.5
	2057	3.3	1.0		2055	0.7	0.2
12	0257	12.9	3.9	27	0303	15.1	4.6
Th	0918	1.7	0.5	F	0921	-0.7	-0.2
	1535	13.1	4.0		1534	15.7	4.8
	2138	2.3	0.7		2145	-0.6	-0.2
13	0340	13.5	4.1	28	0354	15.9	4.8
F	0956	0.9	0.3	Sa	1008	-1.6	-0.5
	1611	13.8	4.2		1622	16.5	5.0
	2216	1.5	0.5		2231	-1.4	-0.4
14	0417	14.0	4.3				
Sa	1030	0.3	0.1				
	1644	14.4	4.4				
	2251	0.8	0.2				
15	0453	14.4	4.4				
Su	1104	-0.1	0.0				
	1719	14.9	4.5				
	2325	0.4	0.1				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0443	16.3	5.0	16	0426	14.7	4.5
Su	1050	-2.0	-0.6	M	1036	-0.2	-0.1
	1708	17.0	5.2		1643	15.4	4.7
	2313	-1.8	-0.5		2259	-0.5	-0.2
2	0529	16.4	5.0	17	0503	15.1	4.6
M	1131	-1.9	-0.6	Tu	1110	-0.5	-0.2
	1751	17.0	5.2		1717	15.8	4.8
	2354	-1.6	-0.5		2333	-0.7	-0.2
3	0611	16.0	4.9	18	0538	15.2	4.6
Tu	1210	-1.3	-0.4	W	1145	-0.4	-0.1
	1831	16.6	5.1		1754	15.9	4.8
4	0034	-1.0	-0.3	19	0009	-0.6	-0.2
W	0652	15.3	4.7	Th	0615	15.1	4.6
	1251	-0.3	-0.1		1222	0.0	0.0
	1908	15.7	4.8		1828	15.7	4.8
5	0116	0.0	0.0	20	0049	-0.2	-0.1
Th	0732	14.3	4.4	F	0655	14.7	4.5
	1332	1.0	0.3		1302	0.7	0.2
	1947	14.7	4.5		1908	15.2	4.6
6	0201	1.1	0.3	21	0133	0.5	0.2
F	0809	13.1	4.0	Sa	0737	14.0	4.3
	1417	2.3	0.7		1349	1.6	0.5
	2025	13.5	4.1		1953	14.5	4.4
7	0246	2.3	0.7	22	0225	1.3	0.4
Sa	0856	11.9	3.6	Su	0830	13.2	4.0
	1507	3.6	1.1		1446	2.6	0.8
	2110	12.3	3.7		2048	13.5	4.1
8	0341	3.3	1.0	23	0328	2.1	0.6
Su	0952	10.9	3.3	M	0936	12.4	3.8
	1605	4.6	1.4		1555	3.3	1.0
	2211	11.3	3.4		2202	12.7	3.9
9	0445	4.0	1.2	24	0441	2.6	0.8
M	1116	10.4	3.2	Tu	1102	12.2	3.7
	1716	5.1	1.6		1714	3.5	1.1
	2334	10.8	3.3		2333	12.5	3.8
10	0555	4.2	1.3	25	0557	2.5	0.8
Tu	1239	10.6	3.2	W	1226	12.7	3.9
	1832	5.0	1.5		1834	3.0	0.9
11	0050	11.1	3.4	26	0053	13.1	4.0
W	0706	3.8	1.2	Th	0711	1.8	0.5
	1338	11.4	3.5		1330	13.8	4.2
	1939	4.3	1.3		1943	1.9	0.6
12	0148	11.8	3.6	27	0156	14.0	4.3
Th	0804	3.0	0.9	F	0812	0.9	0.3
	1423	12.3	3.7		1426	14.9	4.5
	2031	3.2	1.0		2041	0.7	0.2
13	0233	12.6	3.8	28	0249	14.9	4.5
F	0849	2.0	0.6	Sa	0903	-0.1	0.0
	1503	13.2	4.0		1513	15.8	4.8
	2113	2.1	0.6		2127	-0.4	-0.1
14	0313	13.4	4.1	29	0337	15.6	4.8
Sa	0927	1.1	0.3	Su	0946	-0.8	-0.2
	1537	14.1	4.3		1558	16.5	5.0
	2150	1.0	0.3		2209	-1.2	-0.4
15	0350	14.1	4.3	30	0422	15.9	4.8
Su	1003	0.3	0.1	M	1027	-1.1	-0.3
	1609	14.8	4.5		1641	16.7	5.1
	2223	0.1	0.0		2250	-1.5	-0.5
				31	0504	15.9	4.8
				Tu	1105	-1.0	-0.3
					1721	16.6	5.1
					2327	-1.3	-0.4

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0546	15.6	4.8	16	0515	15.7	4.8
W	1143	-0.4	-0.1	Th	1121	-0.1	0.0
	1759	16.2	4.9		1726	16.5	5.0
					2348	-1.0	-0.3
2	0004	-0.7	-0.2	17	0557	15.6	4.8
Th	0623	15.0	4.6	F	1202	0.2	0.1
	1221	0.5	0.2		1808	16.2	4.9
	1836	15.4	4.7				
3	0044	0.2	0.1	18	0030	-0.5	-0.2
F	0702	14.2	4.3	Sa	0641	15.3	4.7
	1259	1.6	0.5		1247	0.9	0.3
	1912	14.4	4.4		1855	15.6	4.8
4	0124	1.3	0.4	19	0118	0.3	0.1
Sa	0739	13.2	4.0	Su	0731	14.7	4.5
	1342	2.8	0.9		1339	1.8	0.5
	1950	13.4	4.1		1945	14.7	4.5
5	0209	2.4	0.7	20	0214	1.2	0.4
Su	0819	12.2	3.7	M	0825	13.9	4.2
	1430	3.9	1.2		1440	2.7	0.8
	2030	12.3	3.7		2046	13.8	4.2
6	0302	3.4	1.0	21	0317	2.1	0.6
M	0912	11.3	3.4	Tu	0933	13.3	4.1
	1531	4.8	1.5		1552	3.3	1.0
	2125	11.3	3.4		2200	13.0	4.0
7	0402	4.1	1.2	22	0429	2.6	0.8
Tu	1025	10.8	3.3	W	1053	13.2	4.0
	1640	5.3	1.6		1706	3.3	1.0
	2245	10.8	3.3		2326	12.9	3.9
8	0509	4.4	1.3	23	0541	2.6	0.8
W	1149	11.0	3.4	Th	1209	13.6	4.1
	1752	5.1	1.6		1818	2.8	0.9
9	0008	11.0	3.4	24	0040	13.4	4.1
Th	0618	4.2	1.3	F	0648	2.2	0.7
	1254	11.7	3.6		1311	14.4	4.4
	1858	4.4	1.3		1925	2.0	0.6
10	0109	11.7	3.6	25	0141	14.1	4.3
F	0719	3.5	1.1	Sa	0748	1.6	0.5
	1338	12.6	3.8		1402	15.2	4.6
	1952	3.4	1.0		2020	1.1	0.3
11	0154	12.6	3.8	26	0231	14.7	4.5
Sa	0807	2.7	0.8	Su	0839	1.0	0.3
	1418	13.6	4.1		1449	15.8	4.8
	2036	2.2	0.7		2105	0.2	0.1
12	0236	13.5	4.1	27	0316	15.2	4.6
Su	0849	1.7	0.5	M	0924	0.5	0.2
	1453	14.5	4.4		1530	16.2	4.9
	2118	1.0	0.3		2147	-0.3	-0.1
13	0313	14.4	4.4	28	0359	15.4	4.7
M	0929	0.9	0.3	Tu	1002	0.3	0.1
	1529	15.4	4.7		1611	16.3	5.0
	2153	0.0	0.0		2225	-0.5	-0.2
14	0353	15.0	4.6	29	0439	15.4	4.7
Tu	1006	0.2	0.1	W	1041	0.5	0.2
	1606	16.0	4.9		1651	16.1	4.9
	2230	-0.7	-0.2		2302	-0.4	-0.1
15	0433	15.5	4.7	30	0520	15.1	4.6
W	1043	-0.1	0.0	Th	1117	0.9	0.3
	1646	16.4	5.0		1729	15.7	4.8
	2308	-1.0	-0.3		2338	0.1	0.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0557	14.7	4.5	16	0543	16.1	4.9
F	1154	1.6	0.5	Sa	1147	0.5	0.2
	1806	15.1	4.6		1755	16.6	5.1
2	0015	0.8	0.2	17	0015	-0.6	-0.2
Sa	0636	14.1	4.3	Su	0633	15.9	4.8
	1233	2.4	0.7		1236	1.1	0.3
	1843	14.3	4.4		1847	16.0	4.9
3	0055	1.7	0.5	18	0108	0.2	0.1
Su	0713	13.5	4.1	M	0726	15.6	4.8
	1316	3.4	1.0		1332	1.8	0.5
	1921	13.5	4.1		1942	15.3	4.7
4	0139	2.6	0.8	19	0203	1.0	0.3
M	0755	12.8	3.9	Tu	0825	15.0	4.6
	1403	4.2	1.3		1435	2.4	0.7
	2001	12.6	3.8		2043	14.4	4.4
5	0227	3.4	1.0	20	0306	1.8	0.5
Tu	0843	12.2	3.7	W	0925	14.6	4.5
	1502	4.9	1.5		1541	2.9	0.9
	2054	11.9	3.6		2152	13.7	4.2
6	0323	4.1	1.2	21	0410	2.4	0.7
W	0941	11.8	3.6	Th	1036	14.3	4.4
	1604	5.1	1.6		1649	3.0	0.9
	2159	11.4	3.5		2308	13.4	4.1
7	0424	4.4	1.3	22	0516	2.7	0.8
Th	1050	11.9	3.6	F	1144	14.5	4.4
	1708	5.0	1.5		1755	2.8	0.9
	2314	11.4	3.5				
8	0526	4.4	1.3	23	0018	13.6	4.1
F	1155	12.3	3.7	Sa	0618	2.7	0.8
	1809	4.4	1.3		1245	14.8	4.5
					1856	2.3	0.7
9	0018	11.9	3.6	24	0117	13.9	4.2
Sa	0624	4.0	1.2	Su	0717	2.6	0.8
	1245	13.1	4.0		1335	15.2	4.6
	1904	3.6	1.1		1951	1.8	0.5
10	0109	12.7	3.9	25	0207	14.3	4.4
Su	0719	3.3	1.0	M	0810	2.3	0.7
	1327	14.0	4.3		1420	15.5	4.7
	1956	2.5	0.8		2041	1.3	0.4
11	0156	13.6	4.1	26	0252	14.5	4.4
M	0808	2.5	0.8	Tu	0857	2.1	0.6
	1410	15.0	4.6		1503	15.6	4.8
	2041	1.3	0.4		2123	0.9	0.3
12	0236	14.5	4.4	27	0337	14.6	4.5
Tu	0852	1.7	0.5	W	0937	1.9	0.6
	1450	15.8	4.8		1542	15.6	4.8
	2123	0.3	0.1		2203	0.7	0.2
13	0319	15.2	4.6	28	0419	14.7	4.5
W	0937	1.0	0.3	Th	1018	1.9	0.6
	1532	16.4	5.0		1622	15.4	4.7
	2204	-0.5	-0.2		2241	0.7	0.2
14	0406	15.8	4.8	29	0458	14.6	4.5
Th	1019	0.5	0.2	F	1055	2.1	0.6
	1618	16.8	5.1		1702	15.2	4.6
	2246	-0.9	-0.3		2317	0.9	0.3
15	0453	16.1	4.9	30	0538	14.5	4.4
F	1102	0.3	0.1	Sa	1134	2.5	0.8
	1705	16.8	5.1		1742	14.8	4.5
	2330	-0.9	-0.3		2354	1.3	0.4
				31	0617	14.2	4.3
				Su	1212	3.0	0.9
					1820	14.3	4.4

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0031	1.9	0.6	16	0054	-0.3	-0.1
M	0655	13.9	4.2	Tu	0718	16.6	5.1
	1255	3.5	1.1		1321	1.2	0.4
	1900	13.8	4.2		1936	16.0	4.9
2	0113	2.5	0.8	17	0150	0.5	0.2
Tu	0734	13.6	4.1	W	0811	16.2	4.9
	1340	4.1	1.2		1419	1.7	0.5
	1940	13.2	4.0		2032	15.2	4.6
3	0158	3.2	1.0	18	0246	1.3	0.4
W	0817	13.3	4.1	Th	0907	15.6	4.8
	1430	4.5	1.4		1522	2.2	0.7
	2025	12.7	3.9		2133	14.4	4.4
4	0248	3.7	1.1	19	0346	2.1	0.6
Th	0859	13.0	4.0	F	1007	15.1	4.6
	1525	4.7	1.4		1623	2.6	0.8
	2115	12.3	3.7		2239	13.7	4.2
5	0339	4.1	1.2	20	0444	2.8	0.9
F	0952	12.9	3.9	Sa	1110	14.8	4.5
	1621	4.6	1.4		1724	2.8	0.9
	2216	12.1	3.7		2347	13.4	4.1
6	0433	4.2	1.3	21	0544	3.3	1.0
Sa	1049	13.1	4.0	Su	1211	14.6	4.5
	1717	4.2	1.3		1826	2.9	0.9
	2320	12.3	3.7				
7	0529	4.1	1.2	22	0048	13.3	4.1
Su	1148	13.6	4.1	M	0642	3.5	1.1
	1815	3.6	1.1		1303	14.6	4.5
					1922	2.7	0.8
8	0021	12.8	3.9	23	0143	13.5	4.1
M	0626	3.8	1.2	Tu	0741	3.6	1.1
	1240	14.3	4.4		1352	14.7	4.5
	1911	2.8	0.9		2015	2.4	0.7
9	0112	13.6	4.1	24	0231	13.6	4.1
Tu	0725	3.2	1.0	W	0833	3.4	1.0
	1327	15.1	4.6		1436	14.7	4.5
	2004	1.8	0.5		2103	2.0	0.6
10	0204	14.4	4.4	25	0317	13.8	4.2
W	0820	2.4	0.7	Th	0917	3.2	1.0
	1415	15.8	4.8		1521	14.7	4.5
	2055	0.8	0.2		2142	1.6	0.5
11	0253	15.2	4.6	26	0358	14.1	4.3
Th	0911	1.6	0.5	F	0958	2.9	0.9
	1506	16.5	5.0		1601	14.8	4.5
	2142	-0.1	0.0		2221	1.4	0.4
12	0343	15.8	4.8	27	0440	14.3	4.4
F	0958	1.0	0.3	Sa	1038	2.8	0.9
	1558	16.8	5.1		1642	14.7	4.5
	2228	-0.8	-0.2		2258	1.3	0.4
13	0439	16.3	5.0	28	0521	14.4	4.4
Sa	1046	0.6	0.2	Su	1116	2.7	0.8
	1651	17.0	5.2		1723	14.7	4.5
	2316	-1.0	-0.3		2335	1.4	0.4
14	0531	16.6	5.1	29	0559	14.5	4.4
Su	1135	0.5	0.2	M	1154	2.8	0.9
	1746	16.9	5.2		1801	14.5	4.4
15	0003	-0.8	-0.2	30	0010	1.6	0.5
M	0625	16.7	5.1	Tu	0636	14.5	4.4
	1227	0.7	0.2		1233	3.0	0.9
	1841	16.5	5.0		1839	14.2	4.3

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0049	2.1	0.6	16	0126	0.0	0.0
W	0708	14.4	4.4	Th	0750	16.9	5.2
	1315	3.3	1.0		1355	1.0	0.3
	1916	13.9	4.2		2009	15.7	4.8
2	0129	2.6	0.8	17	0217	1.0	0.3
Th	0745	14.2	4.3	F	0838	16.2	4.9
	1358	3.6	1.1		1451	1.7	0.5
	1954	13.5	4.1		2104	14.6	4.5
3	0210	3.1	0.9	18	0312	2.0	0.6
F	0819	14.0	4.3	Sa	0931	15.3	4.7
	1446	3.8	1.2		1549	2.5	0.8
	2036	13.1	4.0		2202	13.6	4.1
4	0256	3.5	1.1	19	0409	3.1	0.9
Sa	0902	13.8	4.2	Su	1028	14.4	4.4
	1536	3.9	1.2		1648	3.1	0.9
	2125	12.7	3.9		2309	12.8	3.9
5	0347	3.9	1.2	20	0507	3.9	1.2
Su	0954	13.7	4.2	M	1133	13.9	4.2
	1628	3.9	1.2		1747	3.5	1.1
	2224	12.5	3.8				
6	0441	4.0	1.2	21	0018	12.5	3.8
M	1051	13.8	4.2	Tu	0609	4.4	1.3
	1727	3.6	1.1		1233	13.6	4.1
	2332	12.7	3.9		1851	3.6	1.1
7	0541	4.0	1.2	22	0119	12.6	3.8
Tu	1155	14.2	4.3	W	0714	4.6	1.4
	1829	3.1	0.9		1327	13.6	4.1
					1951	3.3	1.0
8	0037	13.3	4.1	23	0212	12.9	3.9
W	0646	3.7	1.1	Th	0810	4.3	1.3
	1256	14.8	4.5		1418	13.8	4.2
	1933	2.2	0.7		2041	2.8	0.9
9	0135	14.0	4.3	24	0300	13.3	4.1
Th	0751	3.0	0.9	F	0900	3.8	1.2
	1351	15.5	4.7		1501	14.0	4.3
	2031	1.2	0.4		2124	2.2	0.7
10	0233	14.9	4.5	25	0342	13.8	4.2
F	0849	2.0	0.6	Sa	0942	3.2	1.0
	1449	16.2	4.9		1545	14.3	4.4
	2124	0.1	0.0		2201	1.7	0.5
11	0329	15.8	4.8	26	0422	14.2	4.3
Sa	0943	1.1	0.3	Su	1021	2.7	0.8
	1545	16.7	5.1		1625	14.6	4.5
	2214	-0.7	-0.2		2238	1.3	0.4
12	0424	16.6	5.1	27	0459	14.6	4.5
Su	1035	0.3	0.1	M	1057	2.3	0.7
	1642	17.1	5.2		1704	14.8	4.5
	2301	-1.2	-0.4		2313	1.1	0.3
13	0519	17.1	5.2	28	0533	14.9	4.5
M	1124	-0.1	0.0	Tu	1134	2.1	0.6
	1736	17.2	5.2		1739	14.8	4.5
	2348	-1.2	-0.4		2348	1.2	0.4
14	0611	17.4	5.3	29	0607	15.1	4.6
Tu	1212	-0.1	0.0	W	1209	2.1	0.6
	1828	17.0	5.2		1815	14.7	4.5
15	0036	-0.8	-0.2	30	0022	1.4	0.4
W	0700	17.4	5.3	Th	0639	15.1	4.6
	1304	0.3	0.1		1246	2.3	0.7
	1920	16.5	5.0		1848	14.5	4.4
				31	0057	1.9	0.6
				F	0709	15.0	4.6
					1324	2.6	0.8
					1924	14.2	4.3

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0134	2.4	0.7	16	0235	2.3	0.7
Sa	0743	14.8	4.5	Su	0853	15.0	4.6
	1406	2.9	0.9		1510	2.6	0.8
	2001	13.7	4.2		2123	13.3	4.1
2	0217	3.0	0.9	17	0330	3.5	1.1
Su	0821	14.5	4.4	M	0947	13.8	4.2
	1453	3.2	1.0		1607	3.5	1.1
	2045	13.2	4.0		2226	12.3	3.7
3	0306	3.5	1.1	18	0430	4.6	1.4
M	0907	14.1	4.3	Tu	1049	13.0	4.0
	1548	3.5	1.1		1711	4.2	1.3
	2143	12.7	3.9		2344	11.8	3.6
4	0400	4.0	1.2	19	0537	5.2	1.6
Tu	1007	13.8	4.2	W	1203	12.6	3.8
	1649	3.5	1.1		1817	4.4	1.3
	2253	12.6	3.8				
5	0507	4.2	1.3	20	0056	11.9	3.6
W	1120	13.8	4.2	Th	0645	5.2	1.6
	1758	3.3	1.0		1306	12.7	3.9
					1922	4.1	1.2
6	0011	12.9	3.9	21	0154	12.4	3.8
Th	0621	4.0	1.2	F	0750	4.8	1.5
	1234	14.2	4.3		1359	13.1	4.0
	1909	2.6	0.8		2018	3.4	1.0
7	0119	13.8	4.2	22	0239	13.1	4.0
F	0733	3.2	1.0	Sa	0841	4.0	1.2
	1339	15.0	4.6		1444	13.6	4.1
	2012	1.5	0.5		2103	2.6	0.8
8	0220	14.9	4.5	23	0318	13.8	4.2
Sa	0836	2.0	0.6	Su	0922	3.1	0.9
	1439	15.9	4.8		1524	14.2	4.3
	2108	0.3	0.1		2140	1.9	0.6
9	0316	16.0	4.9	24	0354	14.5	4.4
Su	0932	0.8	0.2	M	0958	2.3	0.7
	1535	16.7	5.1		1603	14.7	4.5
	2158	-0.8	-0.2		2214	1.3	0.4
10	0411	16.9	5.2	25	0427	15.0	4.6
M	1020	-0.2	-0.1	Tu	1035	1.7	0.5
	1630	17.3	5.3		1638	15.1	4.6
	2244	-1.4	-0.4		2247	0.9	0.3
11	0500	17.6	5.4	26	0500	15.5	4.7
Tu	1107	-0.8	-0.2	W	1108	1.3	0.4
	1721	17.5	5.3		1712	15.3	4.7
	2329	-1.5	-0.5		2319	0.8	0.2
12	0550	17.9	5.5	27	0532	15.7	4.8
W	1153	-0.9	-0.3	Th	1141	1.1	0.3
	1810	17.3	5.3		1746	15.3	4.7
					2353	1.0	0.3
13	0014	-1.1	-0.3	28	0602	15.8	4.8
Th	0635	17.8	5.4	F	1215	1.3	0.4
	1239	-0.4	-0.1		1819	15.1	4.6
	1857	16.7	5.1				
14	0100	-0.2	-0.1	29	0027	1.4	0.4
F	0721	17.1	5.2	Sa	0636	15.6	4.8
	1326	0.4	0.1		1252	1.6	0.5
	1942	15.8	4.8		1855	14.8	4.5
15	0147	1.0	0.3	30	0102	2.0	0.6
Sa	0806	16.2	4.9	Su	0708	15.3	4.7
	1417	1.5	0.5		1332	2.1	0.6
	2030	14.6	4.5		1932	14.3	4.4
				31	0145	2.7	0.8
				M	0745	14.9	4.5
					1419	2.7	0.8
					2016	13.6	4.1

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0234	3.5	1.1	16	0355	5.1	1.6
Tu	0835	14.2	4.3	W	1005	12.3	3.7
	1515	3.3	1.0		1632	4.7	1.4
	2112	12.9	3.9		2305	11.6	3.5
2	0333	4.1	1.2	17	0505	5.7	1.7
W	0936	13.6	4.1	Th	1127	11.9	3.6
	1623	3.6	1.1		1741	4.9	1.5
	2229	12.5	3.8				
3	0447	4.4	1.3	18	0026	11.8	3.6
Th	1100	13.3	4.1	F	0620	5.6	1.7
	1737	3.5	1.1		1242	12.1	3.7
	2357	12.9	3.9		1850	4.6	1.4
4	0605	4.1	1.2	19	0125	12.4	3.8
F	1224	13.8	4.2	Sa	0722	5.0	1.5
	1853	2.8	0.9		1335	12.7	3.9
					1948	3.9	1.2
5	0109	13.9	4.2	20	0210	13.2	4.0
Sa	0722	3.2	1.0	Su	0815	4.0	1.2
	1333	14.7	4.5		1420	13.5	4.1
	1957	1.7	0.5		2031	3.0	0.9
6	0210	15.2	4.6	21	0247	14.1	4.3
Su	0824	1.8	0.5	M	0857	3.0	0.9
	1431	15.8	4.8		1457	14.3	4.4
	2053	0.4	0.1		2111	2.2	0.7
7	0303	16.4	5.0	22	0318	14.9	4.5
M	0916	0.4	0.1	Tu	0932	2.0	0.6
	1524	16.7	5.1		1532	14.9	4.5
	2140	-0.6	-0.2		2145	1.5	0.5
8	0350	17.3	5.3	23	0351	15.5	4.7
Tu	1003	-0.6	-0.2	W	1006	1.2	0.4
	1613	17.3	5.3		1607	15.4	4.7
	2225	-1.2	-0.4		2219	1.0	0.3
9	0438	17.9	5.5	24	0423	16.0	4.9
W	1047	-1.2	-0.4	Th	1040	0.6	0.2
	1700	17.5	5.3		1641	15.7	4.8
	2307	-1.3	-0.4		2251	0.8	0.2
10	0523	18.1	5.5	25	0455	16.3	5.0
Th	1129	-1.2	-0.4	F	1113	0.4	0.1
	1746	17.3	5.3		1716	15.8	4.8
	2348	-0.8	-0.2		2325	0.9	0.3
11	0607	17.7	5.4	26	0530	16.4	5.0
F	1211	-0.6	-0.2	Sa	1148	0.5	0.2
	1830	16.6	5.1		1753	15.7	4.8
					2359	1.2	0.4
12	0031	0.1	0.0	27	0604	16.2	4.9
Sa	0649	17.0	5.2	Su	1225	0.9	0.3
	1255	0.3	0.1		1830	15.3	4.7
	1913	15.6	4.8				
13	0113	1.4	0.4	28	0039	1.9	0.6
Su	0728	15.9	4.8	M	0641	15.8	4.8
	1340	1.6	0.5		1307	1.6	0.5
	1955	14.4	4.4		1912	14.7	4.5
14	0200	2.8	0.9	29	0121	2.7	0.8
M	0814	14.6	4.5	Tu	0724	15.1	4.6
	1430	2.8	0.9		1355	2.4	0.7
	2043	13.2	4.0		1958	14.0	4.3
15	0251	4.1	1.2	30	0216	3.6	1.1
Tu	0902	13.3	4.1	W	0817	14.3	4.4
	1528	3.9	1.2		1454	3.2	1.0
	2144	12.1	3.7		2059	13.3	4.1

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

BALBOA, PANAMA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0323	4.2	1.3	16	0429	5.9	1.8
Th	0925	13.5	4.1	F	1040	11.7	3.6
	1607	3.6	1.1		1658	5.2	1.6
	2221	12.9	3.9		2341	11.9	3.6
2	0439	4.4	1.3	17	0541	5.7	1.7
F	1054	13.2	4.0	Sa	1200	11.9	3.6
	1722	3.6	1.1		1803	5.0	1.5
	2349	13.4	4.1				
3	0557	4.0	1.2	18	0040	12.6	3.8
Sa	1218	13.7	4.2	Su	0645	5.0	1.5
	1836	3.0	0.9		1259	12.5	3.8
					1903	4.4	1.3
4	0058	14.4	4.4	19	0127	13.4	4.1
Su	0709	2.9	0.9	M	0735	4.1	1.2
	1323	14.7	4.5		1343	13.3	4.1
	1939	2.0	0.6		1951	3.6	1.1
5	0154	15.6	4.8	20	0204	14.3	4.4
M	0808	1.6	0.5	Tu	0820	3.0	0.9
	1418	15.8	4.8		1423	14.2	4.3
	2033	0.9	0.3		2033	2.8	0.9
6	0242	16.7	5.1	21	0237	15.1	4.6
Tu	0900	0.4	0.1	W	0900	2.0	0.6
	1508	16.6	5.1		1457	14.9	4.5
	2121	0.0	0.0		2111	2.0	0.6
7	0329	17.5	5.3	22	0311	15.8	4.8
W	0943	-0.6	-0.2	Th	0937	1.0	0.3
	1553	17.0	5.2		1534	15.5	4.7
	2203	-0.4	-0.1		2148	1.4	0.4
8	0412	17.8	5.4	23	0346	16.4	5.0
Th	1025	-1.0	-0.3	F	1011	0.4	0.1
	1638	17.1	5.2		1611	15.9	4.8
	2243	-0.4	-0.1		2223	1.0	0.3
9	0454	17.8	5.4	24	0423	16.7	5.1
F	1105	-0.9	-0.3	Sa	1047	0.0	0.0
	1721	16.9	5.2		1651	16.1	4.9
	2322	0.0	0.0		2300	1.0	0.3
10	0535	17.3	5.3	25	0500	16.8	5.1
Sa	1144	-0.3	-0.1	Su	1125	0.1	0.0
	1803	16.2	4.9		1732	16.1	4.9
					2338	1.2	0.4
11	0002	0.9	0.3	26	0542	16.5	5.0
Su	0617	16.5	5.0	M	1205	0.4	0.1
	1225	0.6	0.2		1814	15.8	4.8
	1844	15.4	4.7				
12	0044	2.1	0.6	27	0020	1.8	0.5
M	0655	15.5	4.7	Tu	0625	16.0	4.9
	1307	1.8	0.5		1249	1.1	0.3
	1925	14.3	4.4		1900	15.3	4.7
13	0126	3.3	1.0	28	0110	2.6	0.8
Tu	0737	14.3	4.4	W	0713	15.3	4.7
	1353	3.0	0.9		1342	2.0	0.6
	2011	13.3	4.1		1953	14.6	4.5
14	0217	4.5	1.4	29	0206	3.4	1.0
W	0822	13.2	4.0	Th	0811	14.4	4.4
	1448	4.1	1.2		1443	2.8	0.9
	2103	12.4	3.8		2056	14.0	4.3
15	0320	5.4	1.6	30	0315	3.9	1.2
Th	0921	12.2	3.7	F	0923	13.7	4.2
	1549	4.9	1.5		1552	3.3	1.0
	2218	11.8	3.6		2213	13.8	4.2
				31	0430	4.0	1.2
				Sa	1047	13.4	4.1
					1704	3.4	1.0
					2332	14.1	4.3

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0544	3.5	1.1	16	0552	4.9	1.5
Su	1205	13.8	4.2	M	1205	12.2	3.7
	1814	3.0	0.9		1808	4.7	1.4
2	0037	14.9	4.5	17	0032	13.3	4.1
M	0650	2.7	0.8	Tu	0648	4.2	1.3
	1309	14.6	4.5		1258	12.9	3.9
	1915	2.4	0.7		1901	4.1	1.2
3	0133	15.8	4.8	18	0114	14.1	4.3
Tu	0748	1.7	0.5	W	0738	3.2	1.0
	1402	15.4	4.7		1341	13.7	4.2
	2010	1.7	0.5		1949	3.4	1.0
4	0220	16.6	5.1	19	0154	14.9	4.5
W	0839	0.7	0.2	Th	0823	2.2	0.7
	1449	16.0	4.9		1421	14.5	4.4
	2057	1.1	0.3		2036	2.6	0.8
5	0305	17.0	5.2	20	0231	15.7	4.8
Th	0924	0.0	0.0	F	0905	1.2	0.4
	1533	16.3	5.0		1503	15.2	4.6
	2140	0.7	0.2		2118	1.9	0.6
6	0346	17.2	5.2	21	0313	16.3	5.0
F	1004	-0.3	-0.1	Sa	0945	0.4	0.1
	1617	16.3	5.0		1545	15.8	4.8
	2221	0.8	0.2		2158	1.3	0.4
7	0428	17.0	5.2	22	0353	16.7	5.1
Sa	1043	-0.2	-0.1	Su	1026	-0.2	-0.1
	1700	16.1	4.9		1628	16.1	4.9
	2300	1.1	0.3		2240	1.0	0.3
8	0508	16.5	5.0	23	0438	16.8	5.1
Su	1122	0.2	0.1	M	1108	-0.3	-0.1
	1742	15.7	4.8		1717	16.3	5.0
	2338	1.8	0.5		2324	1.1	0.3
9	0547	15.9	4.8	24	0526	16.7	5.1
M	1159	1.0	0.3	Tu	1150	-0.1	0.0
	1821	15.1	4.6		1804	16.2	4.9
10	0018	2.6	0.8	25	0010	1.4	0.4
Tu	0628	15.1	4.6	W	0617	16.3	5.0
	1239	1.9	0.6		1238	0.4	0.1
	1900	14.4	4.4		1855	15.9	4.8
11	0100	3.5	1.1	26	0102	1.9	0.6
W	0709	14.2	4.3	Th	0710	15.6	4.8
	1324	2.9	0.9		1332	1.1	0.3
	1945	13.6	4.1		1950	15.5	4.7
12	0150	4.4	1.3	27	0201	2.5	0.8
Th	0753	13.2	4.0	F	0809	14.9	4.5
	1411	3.8	1.2		1430	1.9	0.6
	2030	13.0	4.0		2048	15.0	4.6
13	0246	5.1	1.6	28	0304	2.9	0.9
F	0843	12.4	3.8	Sa	0912	14.2	4.3
	1507	4.5	1.4		1533	2.5	0.8
	2128	12.5	3.8		2155	14.7	4.5
14	0349	5.5	1.7	29	0413	3.1	0.9
Sa	0947	11.9	3.6	Su	1027	13.7	4.2
	1608	4.9	1.5		1640	2.9	0.9
	2234	12.4	3.8		2305	14.7	4.5
15	0453	5.4	1.6	30	0519	2.9	0.9
Su	1102	11.8	3.6	M	1141	13.7	4.2
	1709	4.9	1.5		1745	3.0	0.9
	2340	12.7	3.9				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0011	14.9	4.5	16	0552	4.0	1.2
Tu	0624	2.5	0.8	W	1201	12.2	3.7
	1245	14.1	4.3		1805	4.3	1.3
	1845	2.9	0.9				
2	0106	15.4	4.7	17	0019	13.6	4.1
W	0722	2.0	0.6	Th	0650	3.3	1.0
	1343	14.5	4.4		1256	12.9	3.9
	1943	2.6	0.8		1903	3.9	1.2
3	0156	15.7	4.8	18	0111	14.3	4.4
Th	0816	1.4	0.4	F	0743	2.4	0.7
	1431	14.8	4.5		1346	13.7	4.2
	2036	2.2	0.7		1959	3.1	0.9
4	0241	15.9	4.8	19	0157	15.0	4.6
F	0904	0.9	0.3	Sa	0836	1.4	0.4
	1516	15.1	4.6		1433	14.5	4.4
	2121	2.0	0.6		2049	2.3	0.7
5	0326	15.9	4.8	20	0244	15.7	4.8
Sa	0945	0.6	0.2	Su	0921	0.4	0.1
	1559	15.2	4.6		1524	15.3	4.7
	2203	1.8	0.5		2140	1.4	0.4
6	0406	15.8	4.8	21	0334	16.2	4.9
Su	1025	0.5	0.2	M	1007	-0.4	-0.1
	1641	15.1	4.6		1614	15.9	4.8
	2241	1.9	0.6		2225	0.7	0.2
7	0448	15.5	4.7	22	0425	16.6	5.1
M	1102	0.6	0.2	Tu	1052	-0.9	-0.3
	1722	15.0	4.6		1706	16.4	5.0
	2320	2.2	0.7		2312	0.4	0.1
8	0527	15.2	4.6	23	0520	16.7	5.1
Tu	1139	1.0	0.3	W	1138	-1.0	-0.3
	1804	14.8	4.5		1757	16.7	5.1
	2359	2.6	0.8				
9	0608	14.7	4.5	24	0001	0.3	0.1
W	1217	1.6	0.5	Th	0612	16.5	5.0
	1841	14.4	4.4		1225	-0.7	-0.2
					1847	16.7	5.1
10	0039	3.1	0.9	25	0052	0.6	0.2
Th	0647	14.1	4.3	F	0705	16.1	4.9
	1257	2.2	0.7		1316	-0.1	0.0
	1921	14.0	4.3		1939	16.4	5.0
11	0124	3.7	1.1	26	0147	1.0	0.3
F	0726	13.5	4.1	Sa	0758	15.4	4.7
	1340	2.9	0.9		1411	0.7	0.2
	2001	13.6	4.1		2030	15.9	4.8
12	0214	4.2	1.3	27	0246	1.6	0.5
Sa	0809	12.9	3.9	Su	0854	14.6	4.5
	1427	3.6	1.1		1510	1.6	0.5
	2043	13.2	4.0		2128	15.2	4.6
13	0307	4.5	1.4	28	0347	2.1	0.6
Su	0856	12.3	3.7	M	1000	13.7	4.2
	1519	4.1	1.2		1610	2.4	0.7
	2130	12.9	3.9		2229	14.6	4.5
14	0400	4.6	1.4	29	0449	2.4	0.7
M	0955	11.9	3.6	Tu	1109	13.2	4.0
	1610	4.4	1.3		1710	3.0	0.9
	2224	12.9	3.9		2336	14.3	4.4
15	0457	4.4	1.3	30	0552	2.6	0.8
Tu	1100	11.9	3.6	W	1218	13.0	4.0
	1706	4.5	1.4		1813	3.4	1.0
	2324	13.1	4.0				
				31	0037	14.2	4.3
				Th	0656	2.5	0.8
					1319	13.1	4.0
					1917	3.4	1.0

Time meridian 75° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0309	9.9	3.0	16	0339	8.5	2.6
Th	0926	-0.7	-0.2	F	0951	0.5	0.2
	1545	9.4	2.9		1610	8.3	2.5
	2145	-0.1	0.0		2205	1.2	0.4
2	0401	10.0	3.0	17	0416	8.5	2.6
F	1016	-0.9	-0.3	Sa	1026	0.3	0.1
	1637	9.7	3.0		1647	8.5	2.6
	2239	-0.2	-0.1		2242	1.0	0.3
3	0454	9.8	3.0	18	0453	8.5	2.6
Sa	1107	-0.8	-0.2	Su	1100	0.3	0.1
	1728	9.8	3.0		1721	8.6	2.6
	2332	-0.1	0.0		2321	0.9	0.3
4	0545	9.5	2.9	19	0530	8.4	2.6
Su	1155	-0.6	-0.2	M	1134	0.4	0.1
	1819	9.6	2.9		1756	8.6	2.6
					2358	0.9	0.3
5	0026	0.2	0.1	20	0606	8.1	2.5
M	0638	9.0	2.7	Tu	1209	0.6	0.2
	1246	-0.1	0.0		1832	8.6	2.6
	1912	9.4	2.9				
6	0120	0.6	0.2	21	0038	1.0	0.3
Tu	0731	8.5	2.6	W	0646	7.9	2.4
	1336	0.4	0.1		1246	0.8	0.2
	2004	9.0	2.7		1909	8.5	2.6
7	0216	1.0	0.3	22	0120	1.1	0.3
W	0829	7.8	2.4	Th	0728	7.5	2.3
	1429	1.0	0.3		1328	1.0	0.3
	2058	8.5	2.6		1952	8.4	2.6
8	0317	1.4	0.4	23	0209	1.2	0.4
Th	0927	7.3	2.2	F	0816	7.2	2.2
	1524	1.6	0.5		1415	1.3	0.4
	2154	8.2	2.5		2045	8.3	2.5
9	0417	1.6	0.5	24	0303	1.3	0.4
F	1030	7.0	2.1	Sa	0916	7.0	2.1
	1622	2.0	0.6		1509	1.5	0.5
	2254	7.9	2.4		2144	8.2	2.5
10	0519	1.7	0.5	25	0406	1.4	0.4
Sa	1135	6.8	2.1	Su	1024	6.9	2.1
	1725	2.3	0.7		1617	1.6	0.5
	2351	7.8	2.4		2251	8.2	2.5
11	0618	1.7	0.5	26	0515	1.2	0.4
Su	1233	6.9	2.1	M	1135	7.2	2.2
	1825	2.3	0.7		1728	1.5	0.5
12	0044	7.8	2.4	27	0000	8.4	2.6
M	0711	1.5	0.5	Tu	0625	0.8	0.2
	1326	7.1	2.2		1244	7.6	2.3
	1918	2.2	0.7		1841	1.2	0.4
13	0132	7.9	2.4	28	0105	8.8	2.7
Tu	0755	1.2	0.4	W	0726	0.3	0.1
	1412	7.4	2.3		1345	8.3	2.5
	2003	2.0	0.6		1945	0.7	0.2
14	0217	8.1	2.5	29	0206	9.2	2.8
W	0838	0.9	0.3	Th	0822	-0.3	-0.1
	1454	7.7	2.3		1443	9.0	2.7
	2048	1.7	0.5		2043	0.1	0.0
15	0259	8.3	2.5	30	0259	9.6	2.9
Th	0916	0.6	0.2	F	0913	-0.7	-0.2
	1533	8.0	2.4		1533	9.5	2.9
	2127	1.4	0.4		2136	-0.3	-0.1
				31	0350	9.8	3.0
				Sa	1001	-1.0	-0.3
					1622	9.9	3.0
					2227	-0.5	-0.2

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0438	9.8	3.0	16	0431	8.6	2.6
Su	1047	-1.0	-0.3	M	1033	0.0	0.0
	1708	10.0	3.0		1650	9.0	2.7
	2315	-0.5	-0.2		2254	0.2	0.1
2	0526	9.5	2.9	17	0505	8.6	2.6
M	1132	-0.8	-0.2	Tu	1105	0.0	0.0
	1753	9.9	3.0		1724	9.1	2.8
					2330	0.1	0.0
3	0003	-0.3	-0.1	18	0541	8.4	2.6
Tu	0614	9.1	2.8	W	1139	0.1	0.0
	1217	-0.3	-0.1		1800	9.0	2.7
	1840	9.5	2.9				
4	0051	0.2	0.1	19	0009	0.2	0.1
W	0701	8.4	2.6	Th	0617	8.1	2.5
	1301	0.3	0.1		1215	0.3	0.1
	1927	8.9	2.7		1838	8.9	2.7
5	0138	0.7	0.2	20	0051	0.5	0.2
Th	0749	7.7	2.3	F	0659	7.7	2.3
	1347	1.0	0.3		1259	0.7	0.2
	2015	8.3	2.5		1919	8.6	2.6
6	0229	1.3	0.4	21	0136	0.8	0.2
F	0845	7.1	2.2	Sa	0749	7.3	2.2
	1438	1.7	0.5		1345	1.1	0.3
	2109	7.7	2.3		2013	8.2	2.5
7	0328	1.7	0.5	22	0232	1.1	0.3
Sa	0946	6.6	2.0	Su	0849	7.0	2.1
	1535	2.3	0.7		1445	1.5	0.5
	2209	7.3	2.2		2117	7.9	2.4
8	0434	2.0	0.6	23	0340	1.3	0.4
Su	1056	6.3	1.9	M	1003	6.8	2.1
	1643	2.6	0.8		1558	1.7	0.5
	2311	7.1	2.2		2232	7.7	2.3
9	0543	2.0	0.6	24	0455	1.3	0.4
M	1204	6.4	2.0	Tu	1119	7.0	2.1
	1752	2.6	0.8		1719	1.6	0.5
					2348	7.9	2.4
10	0015	7.1	2.2	25	0610	0.9	0.3
Tu	0644	1.8	0.5	W	1233	7.6	2.3
	1303	6.7	2.0		1833	1.2	0.4
	1857	2.4	0.7				
11	0110	7.4	2.3	26	0057	8.3	2.5
W	0734	1.4	0.4	Th	0713	0.4	0.1
	1350	7.1	2.2		1334	8.3	2.5
	1948	2.0	0.6		1940	0.5	0.2
12	0158	7.7	2.3	27	0156	8.8	2.7
Th	0815	1.0	0.3	F	0809	-0.2	-0.1
	1432	7.6	2.3		1427	9.0	2.7
	2030	1.5	0.5		2035	-0.1	0.0
13	0240	8.1	2.5	28	0248	9.2	2.8
F	0852	0.6	0.2	Sa	0857	-0.7	-0.2
	1510	8.1	2.5		1515	9.6	2.9
	2108	1.1	0.3		2123	-0.6	-0.2
14	0318	8.4	2.6				
Sa	0927	0.3	0.1				
	1544	8.5	2.6				
	2145	0.7	0.2				
15	0354	8.6	2.6				
Su	1000	0.1	0.0				
	1618	8.8	2.7				
	2220	0.3	0.1				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0335	9.5	2.9	16	0326	8.5	2.6
Su	0944	-1.0	-0.3	M	0927	0.0	0.0
	1601	9.9	3.0		1544	9.1	2.8
	2208	-0.8	-0.2		2150	-0.2	-0.1
2	0420	9.5	2.9	17	0402	8.7	2.7
M	1025	-1.0	-0.3	Tu	1001	-0.2	-0.1
	1643	10.0	3.0		1619	9.3	2.8
	2252	-0.8	-0.2		2226	-0.4	-0.1
3	0503	9.3	2.8	18	0438	8.7	2.7
Tu	1107	-0.7	-0.2	W	1035	-0.3	-0.1
	1724	9.8	3.0		1653	9.4	2.9
	2334	-0.5	-0.2		2305	-0.5	-0.2
4	0545	8.9	2.7	19	0515	8.5	2.6
W	1145	-0.3	-0.1	Th	1113	-0.1	0.0
	1806	9.3	2.8		1731	9.3	2.8
					2343	-0.3	-0.1
5	0017	-0.1	0.0	20	0555	8.3	2.5
Th	0629	8.3	2.5	F	1152	0.1	0.0
	1226	0.4	0.1		1814	9.0	2.7
	1848	8.7	2.7				
6	0059	0.5	0.2	21	0027	0.0	0.0
F	0713	7.6	2.3	Sa	0640	7.9	2.4
	1307	1.1	0.3		1238	0.5	0.2
	1933	8.0	2.4		1859	8.5	2.6
7	0147	1.1	0.3	22	0117	0.5	0.2
Sa	0804	6.9	2.1	Su	0731	7.4	2.3
	1354	1.8	0.5		1330	1.0	0.3
	2024	7.4	2.3		1957	8.0	2.4
8	0241	1.7	0.5	23	0215	0.9	0.3
Su	0903	6.4	2.0	M	0836	7.1	2.2
	1453	2.4	0.7		1434	1.5	0.5
	2122	6.8	2.1		2103	7.6	2.3
9	0345	2.1	0.6	24	0324	1.3	0.4
M	1013	6.1	1.9	Tu	0953	7.0	2.1
	1603	2.7	0.8		1554	1.7	0.5
	2234	6.6	2.0		2224	7.4	2.3
10	0458	2.2	0.7	25	0442	1.3	0.4
Tu	1128	6.2	1.9	W	1111	7.2	2.2
	1720	2.7	0.8		1717	1.5	0.5
	2343	6.7	2.0		2340	7.6	2.3
11	0607	1.9	0.6	26	0556	1.0	0.3
W	1231	6.5	2.0	Th	1220	7.8	2.4
	1828	2.4	0.7		1829	1.0	0.3
12	0041	7.0	2.1	27	0045	8.0	2.4
Th	0700	1.5	0.5	F	0657	0.5	0.2
	1318	7.1	2.2		1318	8.5	2.6
	1918	1.8	0.5		1929	0.4	0.1
13	0129	7.4	2.3	28	0142	8.5	2.6
F	0742	1.1	0.3	Sa	0750	0.0	0.0
	1358	7.6	2.3		1406	9.1	2.8
	2001	1.2	0.4		2019	-0.2	-0.1
14	0211	7.8	2.4	29	0230	8.9	2.7
Sa	0820	0.7	0.2	Su	0835	-0.4	-0.1
	1435	8.2	2.5		1452	9.5	2.9
	2040	0.6	0.2		2104	-0.6	-0.2
15	0251	8.2	2.5	30	0315	9.1	2.8
Su	0853	0.3	0.1	M	0918	-0.6	-0.2
	1510	8.7	2.7		1534	9.7	3.0
	2115	0.1	0.0		2147	-0.8	-0.2
				31	0357	9.1	2.8
				Tu	0957	-0.5	-0.2
					1615	9.7	3.0
					2226	-0.7	-0.2

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0438	8.9	2.7	16	0413	8.8	2.7
W	1038	-0.3	-0.1	Th	1009	-0.2	-0.1
	1654	9.5	2.9		1626	9.6	2.9
	2305	-0.4	-0.1		2240	-0.7	-0.2
2	0520	8.5	2.6	17	0454	8.7	2.7
Th	1115	0.1	0.0	F	1051	-0.1	0.0
	1734	9.0	2.7		1708	9.5	2.9
	2346	0.0	0.0		2324	-0.5	-0.2
3	0601	8.0	2.4	18	0539	8.5	2.6
F	1155	0.7	0.2	Sa	1136	0.2	0.1
	1814	8.4	2.6		1755	9.1	2.8
4	0027	0.5	0.2	19	0011	-0.1	0.0
Sa	0643	7.5	2.3	Su	0629	8.1	2.5
	1235	1.3	0.4		1227	0.6	0.2
	1856	7.8	2.4		1846	8.6	2.6
5	0111	1.1	0.3	20	0104	0.3	0.1
Su	0733	6.9	2.1	M	0725	7.8	2.4
	1323	1.9	0.6		1325	1.1	0.3
	1944	7.2	2.2		1947	8.0	2.4
6	0200	1.6	0.5	21	0205	0.8	0.2
M	0829	6.5	2.0	Tu	0832	7.5	2.3
	1418	2.4	0.7		1434	1.4	0.4
	2042	6.7	2.0		2059	7.6	2.3
7	0301	2.0	0.6	22	0314	1.1	0.3
Tu	0935	6.3	1.9	W	0946	7.5	2.3
	1527	2.7	0.8		1554	1.5	0.5
	2153	6.4	2.0		2215	7.4	2.3
8	0410	2.1	0.6	23	0427	1.2	0.4
W	1044	6.3	1.9	Th	1056	7.8	2.4
	1643	2.6	0.8		1709	1.3	0.4
	2303	6.5	2.0		2327	7.6	2.3
9	0515	2.0	0.6	24	0535	1.0	0.3
Th	1146	6.7	2.0	F	1159	8.2	2.5
	1748	2.2	0.7		1815	0.9	0.3
10	0004	6.8	2.1	25	0028	7.9	2.4
F	0613	1.7	0.5	Sa	0633	0.7	0.2
	1234	7.2	2.2		1255	8.7	2.7
	1841	1.7	0.5		1910	0.4	0.1
11	0053	7.2	2.2	26	0121	8.2	2.5
Sa	0657	1.3	0.4	Su	0724	0.4	0.1
	1317	7.8	2.4		1342	9.1	2.8
	1924	1.0	0.3		1958	0.0	0.0
12	0137	7.7	2.3	27	0209	8.5	2.6
Su	0737	0.8	0.2	M	0809	0.2	0.1
	1355	8.4	2.6		1427	9.3	2.8
	2004	0.4	0.1		2041	-0.3	-0.1
13	0217	8.1	2.5	28	0254	8.6	2.6
M	0814	0.4	0.1	Tu	0852	0.1	0.0
	1431	8.9	2.7		1508	9.4	2.9
	2040	-0.1	0.0		2123	-0.3	-0.1
14	0254	8.5	2.6	29	0334	8.6	2.6
Tu	0851	0.1	0.0	W	0931	0.2	0.1
	1508	9.3	2.8		1546	9.3	2.8
	2120	-0.5	-0.2		2200	-0.3	-0.1
15	0333	8.7	2.7	30	0415	8.5	2.6
W	0928	-0.1	0.0	Th	1009	0.4	0.1
	1546	9.6	2.9		1625	9.1	2.8
	2200	-0.7	-0.2		2239	-0.1	0.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0454	8.2	2.5	16	0439	8.9	2.7
F	1049	0.8	0.2	Sa	1034	0.1	0.0
	1704	8.7	2.7		1652	9.6	2.9
	2318	0.2	0.1		2308	-0.5	-0.2
2	0536	7.9	2.4	17	0528	8.8	2.7
Sa	1129	1.2	0.4	Su	1126	0.3	0.1
	1745	8.2	2.5		1744	9.2	2.8
	2358	0.6	0.2				
3	0619	7.5	2.3	18	0000	-0.2	-0.1
Su	1209	1.6	0.5	M	0622	8.7	2.7
	1827	7.7	2.3		1222	0.6	0.2
					1840	8.8	2.7
4	0040	1.1	0.3	19	0054	0.2	0.1
M	0707	7.2	2.2	Tu	0720	8.5	2.6
	1259	2.0	0.6		1323	1.0	0.3
	1915	7.3	2.2		1941	8.3	2.5
5	0128	1.5	0.5	20	0154	0.6	0.2
Tu	0800	6.9	2.1	W	0824	8.3	2.5
	1352	2.4	0.7		1432	1.2	0.4
	2010	6.9	2.1		2050	7.9	2.4
6	0221	1.8	0.5	21	0258	0.9	0.3
W	0855	6.8	2.1	Th	0929	8.3	2.5
	1453	2.5	0.8		1542	1.3	0.4
	2111	6.6	2.0		2157	7.7	2.3
7	0319	2.0	0.6	22	0403	1.1	0.3
Th	0954	6.9	2.1	F	1033	8.4	2.6
	1559	2.4	0.7		1651	1.2	0.4
	2216	6.6	2.0		2303	7.6	2.3
8	0418	2.0	0.6	23	0506	1.2	0.4
F	1050	7.1	2.2	Sa	1133	8.5	2.6
	1659	2.1	0.6		1751	1.0	0.3
	2315	6.8	2.1				
9	0512	1.8	0.5	24	0004	7.7	2.3
Sa	1141	7.6	2.3	Su	0604	1.1	0.3
	1752	1.6	0.5		1225	8.7	2.7
					1847	0.7	0.2
10	0007	7.1	2.2	25	0057	7.9	2.4
Su	0602	1.5	0.5	M	0657	1.1	0.3
	1225	8.1	2.5		1316	8.9	2.7
	1841	1.0	0.3		1935	0.5	0.2
11	0055	7.5	2.3	26	0148	8.0	2.4
M	0647	1.1	0.3	Tu	0742	1.0	0.3
	1310	8.6	2.6		1358	9.0	2.7
	1925	0.5	0.2		2019	0.4	0.1
12	0138	8.0	2.4	27	0230	8.1	2.5
Tu	0732	0.7	0.2	W	0825	1.0	0.3
	1353	9.1	2.8		1442	9.0	2.7
	2007	0.0	0.0		2059	0.3	0.1
13	0222	8.4	2.6	28	0315	8.2	2.5
W	0815	0.4	0.1	Th	0907	1.1	0.3
	1435	9.5	2.9		1521	8.9	2.7
	2049	-0.4	-0.1		2139	0.3	0.1
14	0306	8.7	2.7	29	0356	8.2	2.5
Th	0859	0.1	0.0	F	0947	1.2	0.4
	1518	9.8	3.0		1602	8.8	2.7
	2135	-0.6	-0.2		2216	0.4	0.1
15	0350	8.9	2.7	30	0436	8.1	2.5
F	0945	0.0	0.0	Sa	1027	1.4	0.4
	1603	9.8	3.0		1641	8.5	2.6
	2220	-0.7	-0.2		2257	0.5	0.2
				31	0516	8.0	2.4
				Su	1108	1.6	0.5
					1721	8.3	2.5
					2334	0.8	0.2

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0600	7.8	2.4	16	0611	9.4	2.9
M	1152	1.8	0.5	Tu	1216	0.4	0.1
	1805	7.9	2.4		1830	9.1	2.8
2	0017	1.1	0.3	17	0040	-0.1	0.0
Tu	0643	7.7	2.3	W	0707	9.2	2.8
	1237	2.0	0.6		1315	0.7	0.2
	1848	7.6	2.3		1927	8.7	2.7
3	0059	1.3	0.4	18	0136	0.4	0.1
W	0728	7.6	2.3	Th	0805	9.1	2.8
	1325	2.1	0.6		1415	0.9	0.3
	1939	7.3	2.2		2028	8.2	2.5
4	0144	1.6	0.5	19	0234	0.8	0.2
Th	0815	7.5	2.3	F	0903	8.9	2.7
	1418	2.2	0.7		1518	1.2	0.4
	2029	7.0	2.1		2130	7.8	2.4
5	0231	1.8	0.5	20	0332	1.2	0.4
F	0904	7.5	2.3	Sa	1002	8.7	2.7
	1511	2.1	0.6		1623	1.3	0.4
	2127	6.9	2.1		2234	7.6	2.3
6	0322	1.9	0.6	21	0432	1.5	0.5
Sa	0954	7.7	2.3	Su	1100	8.6	2.6
	1608	2.0	0.6		1722	1.3	0.4
	2222	6.9	2.1		2335	7.5	2.3
7	0413	1.9	0.6	22	0531	1.7	0.5
Su	1045	8.0	2.4	M	1156	8.5	2.6
	1702	1.6	0.5		1820	1.3	0.4
	2318	7.1	2.2				
8	0508	1.7	0.5	23	0033	7.5	2.3
M	1136	8.4	2.6	Tu	0626	1.8	0.5
	1756	1.2	0.4		1249	8.5	2.6
					1913	1.1	0.3
9	0010	7.4	2.3	24	0126	7.6	2.3
Tu	0559	1.4	0.4	W	0718	1.8	0.5
	1227	8.8	2.7		1337	8.5	2.6
	1846	0.7	0.2		1958	1.0	0.3
10	0100	7.8	2.4	25	0214	7.7	2.3
W	0652	1.1	0.3	Th	0804	1.8	0.5
	1318	9.2	2.8		1419	8.6	2.6
	1937	0.2	0.1		2040	0.9	0.3
11	0151	8.3	2.5	26	0257	7.9	2.4
Th	0745	0.8	0.2	F	0848	1.7	0.5
	1406	9.6	2.9		1502	8.6	2.6
	2027	-0.2	-0.1		2119	0.7	0.2
12	0243	8.7	2.7	27	0339	8.0	2.4
F	0836	0.5	0.2	Sa	0931	1.7	0.5
	1457	9.8	3.0		1542	8.6	2.6
	2115	-0.4	-0.1		2158	0.7	0.2
13	0333	9.0	2.7	28	0419	8.2	2.5
Sa	0930	0.3	0.1	Su	1012	1.6	0.5
	1548	9.9	3.0		1622	8.5	2.6
	2205	-0.6	-0.2		2237	0.7	0.2
14	0424	9.3	2.8	29	0458	8.3	2.5
Su	1023	0.2	0.1	M	1052	1.6	0.5
	1641	9.8	3.0		1702	8.4	2.6
	2256	-0.6	-0.2		2313	0.7	0.2
15	0516	9.4	2.9	30	0537	8.3	2.5
M	1118	0.3	0.1	Tu	1132	1.6	0.5
	1734	9.5	2.9		1742	8.2	2.5
	2347	-0.4	-0.1		2350	0.9	0.3

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height	
	h m	ft	m
1	0614	8.3	2.5
W	1214	1.6	0.5
	1822	8.0	2.4
2	0027	1.1	0.3
Th	0654	8.2	2.5
	1254	1.7	0.5
	1904	7.7	2.3
3	0107	1.3	0.4
F	0733	8.2	2.5
	1339	1.8	0.5
	1947	7.4	2.3
4	0147	1.5	0.5
Sa	0816	8.1	2.5
	1426	1.8	0.5
	2037	7.2	2.2
5	0233	1.7	0.5
Su	0903	8.2	2.5
	1517	1.8	0.5
	2130	7.1	2.2
6	0322	1.8	0.5
M	0954	8.2	2.5
	1615	1.6	0.5
	2229	7.1	2.2
7	0420	1.8	0.5
Tu	1052	8.4	2.6
	1714	1.4	0.4
	2330	7.3	2.2
8	0520	1.7	0.5
W	1151	8.7	2.7
	1812	1.0	0.3
9	0031	7.7	2.3
Th	0623	1.4	0.4
	1249	9.0	2.7
	1911	0.6	0.2
10	0130	8.2	2.5
F	0725	1.0	0.3
	1348	9.4	2.9
	2007	0.1	0.0
11	0225	8.7	2.7
Sa	0822	0.6	0.2
	1443	9.7	3.0
	2059	-0.3	-0.1
12	0320	9.3	2.8
Su	0919	0.2	0.1
	1536	9.9	3.0
	2150	-0.6	-0.2
13	0412	9.7	3.0
M	1013	0.0	0.0
	1628	10.0	3.0
	2241	-0.7	-0.2
14	0501	9.9	3.0
Tu	1108	-0.1	0.0
	1720	9.8	3.0
	2331	-0.6	-0.2
15	0553	10.0	3.0
W	1201	0.0	0.0
	1813	9.5	2.9

Day	Time	Height	
	h m	ft	m
16	0020	-0.3	-0.1
Th	0643	9.8	3.0
	1253	0.3	0.1
	1907	9.0	2.7
17	0111	0.2	0.1
F	0736	9.5	2.9
	1349	0.7	0.2
	2000	8.4	2.6
18	0202	0.7	0.2
Sa	0830	9.1	2.8
	1447	1.1	0.3
	2058	7.8	2.4
19	0257	1.3	0.4
Su	0927	8.6	2.6
	1547	1.5	0.5
	2200	7.4	2.3
20	0356	1.9	0.6
M	1026	8.2	2.5
	1649	1.7	0.5
	2303	7.1	2.2
21	0458	2.2	0.7
Tu	1125	8.0	2.4
	1754	1.8	0.5
22	0008	7.0	2.1
W	0559	2.4	0.7
	1223	7.9	2.4
	1849	1.6	0.5
23	0105	7.2	2.2
Th	0657	2.4	0.7
	1315	8.0	2.4
	1940	1.4	0.4
24	0155	7.5	2.3
F	0748	2.2	0.7
	1403	8.2	2.5
	2022	1.2	0.4
25	0240	7.8	2.4
Sa	0835	1.9	0.6
	1445	8.3	2.5
	2102	0.9	0.3
26	0320	8.1	2.5
Su	0915	1.7	0.5
	1525	8.5	2.6
	2138	0.7	0.2
27	0357	8.4	2.6
M	0954	1.4	0.4
	1603	8.6	2.6
	2213	0.6	0.2
28	0433	8.6	2.6
Tu	1031	1.2	0.4
	1640	8.6	2.6
	2247	0.6	0.2
29	0508	8.7	2.7
W	1108	1.1	0.3
	1717	8.5	2.6
	2321	0.6	0.2
30	0541	8.8	2.7
Th	1145	1.1	0.3
	1753	8.3	2.5
	2355	0.8	0.2
31	0617	8.7	2.7
F	1221	1.1	0.3
	1831	8.0	2.4

AUGUST

Day	Time	Height	
	h m	ft	m
1	0030	1.0	0.3
Sa	0654	8.6	2.6
	1302	1.3	0.4
	1909	7.7	2.3
2	0109	1.2	0.4
Su	0733	8.5	2.6
	1346	1.4	0.4
	1954	7.4	2.3
3	0151	1.5	0.5
M	0818	8.4	2.6
	1437	1.6	0.5
	2047	7.1	2.2
4	0242	1.7	0.5
Tu	0914	8.2	2.5
	1536	1.6	0.5
	2150	7.0	2.1
5	0345	1.9	0.6
W	1018	8.2	2.5
	1642	1.6	0.5
	2301	7.1	2.2
6	0455	1.9	0.6
Th	1127	8.3	2.5
	1751	1.3	0.4
7	0010	7.6	2.3
F	0605	1.6	0.5
	1233	8.7	2.7
	1852	0.8	0.2
8	0113	8.2	2.5
Sa	0713	1.1	0.3
	1334	9.1	2.8
	1951	0.2	0.1
9	0211	8.9	2.7
Su	0814	0.5	0.2
	1431	9.6	2.9
	2044	-0.3	-0.1
10	0304	9.6	2.9
M	0908	-0.1	0.0
	1523	9.9	3.0
	2133	-0.7	-0.2
11	0353	10.1	3.1
Tu	1000	-0.4	-0.1
	1613	10.0	3.0
	2222	-0.9	-0.3
12	0441	10.3	3.1
W	1049	-0.5	-0.2
	1700	9.9	3.0
	2308	-0.8	-0.2
13	0528	10.3	3.1
Th	1137	-0.4	-0.1
	1749	9.5	2.9
	2353	-0.4	-0.1
14	0616	10.0	3.0
F	1227	0.0	0.0
	1837	9.0	2.7
15	0040	0.2	0.1
Sa	0702	9.5	2.9
	1315	0.5	0.2
	1928	8.3	2.5

Day	Time	Height	
	h m	ft	m
16	0128	0.9	0.3
Su	0754	8.8	2.7
	1408	1.1	0.3
	2023	7.6	2.3
17	0218	1.6	0.5
M	0846	8.2	2.5
	1505	1.7	0.5
	2123	7.0	2.1
18	0317	2.2	0.7
Tu	0946	7.7	2.3
	1614	2.0	0.6
	2233	6.7	2.0
19	0426	2.6	0.8
W	1055	7.4	2.3
	1723	2.1	0.6
	2343	6.7	2.0
20	0538	2.7	0.8
Th	1159	7.4	2.3
	1825	2.0	0.6
21	0044	7.0	2.1
F	0641	2.6	0.8
	1255	7.5	2.3
	1918	1.6	0.5
22	0134	7.4	2.3
Sa	0732	2.2	0.7
	1342	7.8	2.4
	2001	1.3	0.4
23	0217	7.8	2.4
Su	0817	1.8	0.5
	1425	8.2	2.5
	2037	0.9	0.3
24	0254	8.2	2.5
M	0855	1.3	0.4
	1502	8.5	2.6
	2111	0.6	0.2
25	0328	8.6	2.6
Tu	0928	0.9	0.3
	1539	8.7	2.7
	2144	0.4	0.1
26	0402	8.9	2.7
W	1004	0.6	0.2
	1614	8.7	2.7
	2216	0.3	0.1
27	0434	9.1	2.8
Th	1039	0.5	0.2
	1648	8.7	2.7
	2248	0.4	0.1
28	0507	9.2	2.8
F	1113	0.4	0.1
	1723	8.5	2.6
	2321	0.5	0.2
29	0539	9.1	2.8
Sa	1149	0.5	0.2
	1758	8.2	2.5
	2355	0.7	0.2
30	0617	8.9	2.7
Su	1229	0.7	0.2
	1838	7.9	2.4
31	0035	1.0	0.3
M	0657	8.7	2.7
	1312	1.0	0.3
	1923	7.5	2.3

SEPTEMBER

Day	Time	Height	
	h m	ft	m
1	0120	1.4	0.4
Tu	0744	8.3	2.5
	1405	1.4	0.4
	2018	7.1	2.2
2	0215	1.7	0.5
W	0845	8.0	2.4
	1506	1.6	0.5
	2127	7.0	2.1
3	0323	2.0	0.6
Th	0956	7.8	2.4
	1618	1.6	0.5
	2245	7.1	2.2
4	0443	1.9	0.6
F	1112	7.9	2.4
	1733	1.3	0.4
	2359	7.6	2.3
5	0559	1.5	0.5
Sa	1223	8.3	2.5
	1839	0.8	0.2
6	0100	8.4	2.6
Su	0705	0.9	0.3
	1324	8.9	2.7
	1935	0.2	0.1
7	0155	9.1	2.8
M	0803	0.2	0.1
	1417	9.4	2.9
	2027	-0.4	-0.1
8	0246	9.8	3.0
Tu	0854	-0.4	-0.1
	1507	9.7	3.0
	2113	-0.7	-0.2
9	0331	10.2	3.1
W	0942	-0.7	-0.2
	1553	9.8	3.0
	2158	-0.8	-0.2
10	0416	10.4	3.2
Th	1026	-0.8	-0.2
	1639	9.7	3.0
	2241	-0.7	-0.2
11	0500	10.2	3.1
F	1110	-0.6	-0.2
	1724	9.3	2.8
	2324	-0.3	-0.1
12	0544	9.8	3.0
Sa	1155	-0.1	0.0
	1809	8.7	2.7
13	0006	0.4	0.1
Su	0629	9.2	2.8
	1241	0.5	0.2
	1856	8.1	2.5
14	0053	1.1	0.3
M	0715	8.5	2.6
	1330	1.1	0.3
	1949	7.4	2.3
15	0142	1.8	0.5
Tu	0808	7.8	2.4
	1426	1.7	0.5
	2049	6.8	2.1

Day	Time	Height	
	h m	ft	m
16	0242	2.5	0.8
W	0911	7.2	2.2
	1531	2.2	0.7
	2201	6.5	2.0
17	0354	2.8	0.9
Th	1021	6.9	2.1
	1645	2.3	0.7
	2314	6.6	2.0
18	0511	2.8	0.9
F	1130	6.9	2.1
	1754	2.1	0.6
19	0015	6.9	2.1
Sa	0618	2.5	0.8
	1227	7.2	2.2
	1844	1.8	0.5
20	0103	7.4	2.3
Su	0708	2.0	0.6
	1316	7.6	2.3
	1926	1.4	0.4
21	0142	7.9	2.4
M	0748	1.5	0.5
	1358	8.0	2.4
	2003	1.0	0.3
22	0219	8.4	2.6
Tu	0825	0.9	0.3
	1435	8.4	2.6
	2036	0.6	0.2
23	0252	8.8	2.7
W	0859	0.5	0.2
	1510	8.6	2.6
	2109	0.4	0.1
24	0325	9.2	2.8
Th	0933	0.1	0.0
	1545	8.7	2.7
	2142	0.2	0.1
25	0400	9.4	2.9
F	1009	-0.1	0.0
	1619	8.7	2.7
	2215	0.2	0.1
26	0432	9.4	2.9
Sa	1043	-0.1	0.0
	1655	8.6	2.6
	2250	0.3	0.1
27	0509	9.3	2.8
Su	1120	0.1	0.0
	1732	8.3	2.5
	2329	0.6	0.2
28	0547	9.1	2.8
M	1201	0.4	0.1
	1814	8.0	2.4
29	0011	0.9	0.3
Tu	0632	8.7	2.7
	1248	0.8	0.2
	1904	7.6	2.3
30	0100	1.3	0.4
W	0723	8.2	2.5
	1343	1.2	0.4
	2005	7.3	2.2

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

PUNTARENAS, COSTA RICA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m
1	0202	1.8	0.5
Th	0829	7.7	2.3
	1449	1.5	0.5
	2117	7.2	2.2
2	0317	2.0	0.6
F	0947	7.5	2.3
	1604	1.6	0.5
	2234	7.4	2.3
3	0440	1.8	0.5
Sa	1106	7.7	2.3
	1719	1.3	0.4
	2344	7.9	2.4
4	0554	1.3	0.4
Su	1212	8.1	2.5
	1821	0.8	0.2
5	0044	8.6	2.6
M	0655	0.6	0.2
	1310	8.6	2.6
	1916	0.3	0.1
6	0137	9.3	2.8
Tu	0748	0.0	0.0
	1401	9.1	2.8
	2005	-0.2	-0.1
7	0223	9.9	3.0
W	0835	-0.5	-0.2
	1448	9.4	2.9
	2051	-0.4	-0.1
8	0307	10.1	3.1
Th	0920	-0.7	-0.2
	1533	9.5	2.9
	2133	-0.4	-0.1
9	0350	10.2	3.1
F	1003	-0.7	-0.2
	1614	9.3	2.8
	2214	-0.2	-0.1
10	0432	9.9	3.0
Sa	1044	-0.5	-0.2
	1658	9.0	2.7
	2256	0.2	0.1
11	0513	9.5	2.9
Su	1126	0.0	0.0
	1742	8.5	2.6
	2337	0.8	0.2
12	0555	8.8	2.7
M	1209	0.5	0.2
	1827	7.9	2.4
13	0021	1.4	0.4
Tu	0640	8.2	2.5
	1254	1.1	0.3
	1917	7.3	2.2
14	0109	2.1	0.6
W	0731	7.5	2.3
	1347	1.7	0.5
	2016	6.9	2.1
15	0210	2.6	0.8
Th	0832	6.9	2.1
	1447	2.1	0.6
	2124	6.6	2.0
16	0319	2.8	0.9
F	0942	6.7	2.0
	1557	2.3	0.7
	2233	6.7	2.0
17	0434	2.8	0.9
Sa	1050	6.7	2.0
	1703	2.2	0.7
	2330	7.0	2.1
18	0539	2.4	0.7
Su	1151	7.0	2.1
	1756	1.9	0.6
19	0020	7.5	2.3
M	0628	1.9	0.6
	1241	7.4	2.3
	1841	1.6	0.5
20	0100	8.0	2.4
Tu	0710	1.3	0.4
	1321	7.8	2.4
	1921	1.2	0.4
21	0138	8.5	2.6
W	0748	0.7	0.2
	1401	8.1	2.5
	1956	0.8	0.2
22	0214	9.0	2.7
Th	0826	0.3	0.1
	1438	8.5	2.6
	2033	0.5	0.2
23	0249	9.4	2.9
F	0902	-0.1	0.0
	1514	8.7	2.7
	2110	0.3	0.1
24	0325	9.6	2.9
Sa	0939	-0.3	-0.1
	1553	8.7	2.7
	2146	0.3	0.1
25	0403	9.6	2.9
Su	1017	-0.3	-0.1
	1631	8.7	2.7
	2226	0.3	0.1
26	0444	9.5	2.9
M	1058	-0.2	-0.1
	1713	8.5	2.6
	2310	0.6	0.2
27	0528	9.2	2.8
Tu	1144	0.1	0.0
	1801	8.3	2.5
	2358	0.9	0.3
28	0617	8.7	2.7
W	1232	0.5	0.2
	1854	8.0	2.4
29	0054	1.3	0.4
Th	0713	8.2	2.5
	1331	1.0	0.3
	1957	7.7	2.3
30	0200	1.6	0.5
F	0821	7.8	2.4
	1436	1.3	0.4
	2108	7.7	2.3
31	0314	1.7	0.5
Sa	0938	7.6	2.3
	1548	1.4	0.4
	2219	7.9	2.4

NOVEMBER

Day	Time h m	Height ft	Height m
1	0431	1.5	0.5
Su	1050	7.7	2.3
	1656	1.2	0.4
	2325	8.4	2.6
2	0540	1.1	0.3
M	1156	8.0	2.4
	1759	0.9	0.3
3	0023	8.9	2.7
Tu	0639	0.6	0.2
	1252	8.3	2.5
	1852	0.6	0.2
4	0113	9.3	2.8
W	0730	0.1	0.0
	1342	8.7	2.7
	1942	0.3	0.1
5	0159	9.6	2.9
Th	0816	-0.2	-0.1
	1428	8.9	2.7
	2026	0.2	0.1
6	0244	9.8	3.0
F	0859	-0.4	-0.1
	1512	8.9	2.7
	2108	0.3	0.1
7	0326	9.7	3.0
Sa	0940	-0.3	-0.1
	1554	8.8	2.7
	2149	0.4	0.1
8	0406	9.5	2.9
Su	1021	-0.1	0.0
	1636	8.6	2.6
	2231	0.8	0.2
9	0447	9.1	2.8
M	1101	0.2	0.1
	1720	8.3	2.5
	2312	1.2	0.4
10	0529	8.6	2.6
Tu	1143	0.6	0.2
	1803	7.9	2.4
	2357	1.7	0.5
11	0611	8.0	2.4
W	1226	1.1	0.3
	1851	7.5	2.3
12	0045	2.1	0.6
Th	0702	7.5	2.3
	1315	1.5	0.5
	1944	7.2	2.2
13	0139	2.4	0.7
F	0754	7.1	2.2
	1405	1.9	0.6
	2042	7.1	2.2
14	0241	2.6	0.8
Sa	0857	6.8	2.1
	1503	2.1	0.6
	2140	7.1	2.2
15	0346	2.6	0.8
Su	1000	6.7	2.0
	1602	2.2	0.7
	2236	7.3	2.2
16	0446	2.3	0.7
M	1100	6.8	2.1
	1656	2.1	0.6
	2325	7.6	2.3
17	0540	1.9	0.6
Tu	1151	7.1	2.2
	1746	1.8	0.5
18	0012	8.1	2.5
W	0625	1.4	0.4
	1239	7.4	2.3
	1833	1.5	0.5
19	0053	8.5	2.6
Th	0710	0.8	0.2
	1324	7.8	2.4
	1914	1.2	0.4
20	0134	9.0	2.7
F	0751	0.4	0.1
	1406	8.2	2.5
	1956	0.8	0.2
21	0215	9.4	2.9
Sa	0833	0.0	0.0
	1448	8.5	2.6
	2040	0.6	0.2
22	0257	9.6	2.9
Su	0915	-0.3	-0.1
	1530	8.7	2.7
	2123	0.4	0.1
23	0342	9.7	3.0
M	0957	-0.4	-0.1
	1614	8.9	2.7
	2210	0.4	0.1
24	0427	9.6	2.9
Tu	1042	-0.4	-0.1
	1701	8.9	2.7
	2300	0.5	0.2
25	0516	9.4	2.9
W	1131	-0.1	0.0
	1753	8.8	2.7
	2352	0.7	0.2
26	0609	9.0	2.7
Th	1222	0.2	0.1
	1848	8.6	2.6
27	0051	1.0	0.3
F	0707	8.5	2.6
	1320	0.6	0.2
	1947	8.5	2.6
28	0154	1.2	0.4
Sa	0810	8.1	2.5
	1420	0.9	0.3
	2051	8.4	2.6
29	0303	1.4	0.4
Su	0919	7.8	2.4
	1523	1.1	0.3
	2156	8.5	2.6
30	0412	1.3	0.4
M	1027	7.7	2.3
	1628	1.3	0.4
	2258	8.6	2.6

DECEMBER

Day	Time h m	Height ft	Height m
1	0519	1.1	0.3
Tu	1130	7.7	2.3
	1730	1.2	0.4
	2356	8.8	2.7
2	0618	0.8	0.2
W	1229	7.9	2.4
	1826	1.2	0.4
3	0049	9.0	2.7
Th	0710	0.6	0.2
	1324	8.1	2.5
	1918	1.1	0.3
4	0137	9.2	2.8
F	0758	0.3	0.1
	1411	8.3	2.5
	2006	1.0	0.3
5	0222	9.2	2.8
Sa	0843	0.2	0.1
	1456	8.4	2.6
	2050	1.0	0.3
6	0304	9.2	2.8
Su	0923	0.2	0.1
	1538	8.4	2.6
	2133	1.1	0.3
7	0347	9.0	2.7
M	1001	0.2	0.1
	1620	8.4	2.6
	2214	1.2	0.4
8	0427	8.8	2.7
Tu	1042	0.4	0.1
	1702	8.3	2.5
	2257	1.4	0.4
9	0508	8.5	2.6
W	1121	0.6	0.2
	1744	8.1	2.5
	2337	1.6	0.5
10	0550	8.1	2.5
Th	1201	0.9	0.3
	1826	7.9	2.4
11	0022	1.8	0.5
F	0634	7.8	2.4
	1243	1.2	0.4
	1911	7.8	2.4
12	0107	2.0	0.6
Sa	0720	7.4	2.3
	1325	1.5	0.5
	1957	7.6	2.3
13	0159	2.2	0.7
Su	0810	7.1	2.2
	1412	1.8	0.5
	2045	7.6	2.3
14	0253	2.2	0.7
M	0903	6.8	2.1
	1500	2.0	0.6
	2135	7.6	2.3
15	0346	2.1	0.6
Tu	1000	6.8	2.1
	1553	2.1	0.6
	2226	7.8	2.4
16	0444	1.9	0.6
W	1058	6.8	2.1
	1645	2.0	0.6
	2317	8.0	2.4
17	0538	1.5	0.5
Th	1151	7.1	2.2
	1740	1.8	0.5
18	0007	8.4	2.6
F	0628	1.1	0.3
	1245	7.4	2.3
	1833	1.5	0.5
19	0058	8.8	2.7
Sa	0718	0.6	0.2
	1334	7.9	2.4
	1926	1.1	0.3
20	0146	9.2	2.8
Su	0806	0.2	0.1
	1423	8.3	2.5
	2017	0.8	0.2
21	0235	9.5	2.9
M	0854	-0.2	-0.1
	1512	8.8	2.7
	2108	0.4	0.1
22	0326	9.7	3.0
Tu	0942	-0.5	-0.2
	1600	9.1	2.8
	2159	0.2	0.1
23	0416	9.8	3.0
W	1031	-0.6	-0.2
	1650	9.4	2.9
	2251	0.1	0.0
24	0506	9.6	2.9
Th	1118	-0.6	-0.2
	1742	9.5	2.9
	2345	0.2	0.1
25	0558	9.3	2.8
F	1209	-0.3	-0.1
	1834	9.4	2.9
26	0040	0.4	0.1
Sa	0654	8.9	2.7
	1302	0.0	0.0
	1928	9.2	2.8
27	0138	0.7	0.2
Su	0752	8.4	2.6
	1357	0.5	0.2
	2025	9.0	2.7
28	0239	0.9	0.3
M	0853	7.9	2.4
	1454	1.0	0.3
	2126	8.7	2.7
29	0343	1.2	0.4
Tu	0957	7.6	2.3
	1555	1.4	0.4
	2226	8.5	2.6
30	0450	1.3	0.4
W	1103	7.4	2.3
	1659	1.6	0.5
	2327	8.4	2.6
31	0554	1.2	0.4
Th	1207	7.3	2.2
	1802	1.8	0.5

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

LA UNION, EL SALVADOR, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m
1	0333	10.7	3.3
Th	0935	-0.9	-0.3
	1610	9.9	3.0
	2156	-0.3	-0.1
2	0426	10.8	3.3
F	1025	-1.1	-0.3
	1703	10.2	3.1
	2249	-0.4	-0.1
3	0518	10.6	3.2
Sa	1113	-1.0	-0.3
	1754	10.3	3.1
	2340	-0.3	-0.1
4	0608	10.3	3.1
Su	1200	-0.7	-0.2
	1844	10.2	3.1
5	0032	0.1	0.0
M	0658	9.7	3.0
	1248	-0.2	-0.1
	1933	9.9	3.0
6	0124	0.5	0.2
Tu	0748	9.1	2.8
	1337	0.5	0.2
	2023	9.6	2.9
7	0218	1.0	0.3
W	0837	8.4	2.6
	1428	1.2	0.4
	2113	9.1	2.8
8	0313	1.5	0.5
Th	0932	7.8	2.4
	1521	1.8	0.5
	2205	8.7	2.7
9	0414	1.9	0.6
F	1027	7.3	2.2
	1619	2.3	0.7
	2300	8.4	2.6
10	0517	2.1	0.6
Sa	1128	7.0	2.1
	1722	2.6	0.8
	2356	8.3	2.5
11	0619	2.0	0.6
Su	1235	7.0	2.1
	1824	2.6	0.8
12	0051	8.3	2.5
M	0710	1.8	0.5
	1336	7.2	2.2
	1920	2.5	0.8
13	0142	8.4	2.6
Tu	0757	1.6	0.5
	1429	7.5	2.3
	2009	2.2	0.7
14	0229	8.6	2.6
W	0840	1.2	0.4
	1511	7.9	2.4
	2051	1.9	0.6
15	0311	8.9	2.7
Th	0919	0.9	0.3
	1551	8.2	2.5
	2133	1.6	0.5
16	0352	9.0	2.7
F	0954	0.7	0.2
	1628	8.5	2.6
	2211	1.4	0.4
17	0430	9.1	2.8
Sa	1029	0.6	0.2
	1703	8.8	2.7
	2248	1.2	0.4
18	0507	9.1	2.8
Su	1103	0.5	0.2
	1736	9.0	2.7
	2325	1.0	0.3
19	0544	9.0	2.7
M	1136	0.5	0.2
	1813	9.1	2.8
20	0003	1.0	0.3
Tu	0621	8.8	2.7
	1212	0.6	0.2
	1848	9.2	2.8
21	0042	1.0	0.3
W	0658	8.5	2.6
	1250	0.8	0.2
	1927	9.2	2.8
22	0127	1.1	0.3
Th	0740	8.2	2.5
	1333	1.0	0.3
	2011	9.2	2.8
23	0215	1.2	0.4
F	0829	7.9	2.4
	1421	1.2	0.4
	2102	9.1	2.8
24	0312	1.3	0.4
Sa	0923	7.7	2.3
	1518	1.5	0.5
	2157	9.1	2.8
25	0414	1.3	0.4
Su	1027	7.6	2.3
	1625	1.6	0.5
	2303	9.1	2.8
26	0521	1.2	0.4
M	1139	7.7	2.3
	1736	1.5	0.5
27	0012	9.3	2.8
Tu	0628	0.8	0.2
	1254	8.1	2.5
	1849	1.2	0.4
28	0120	9.6	2.9
W	0731	0.2	0.1
	1405	8.7	2.7
	1953	0.6	0.2
29	0224	10.0	3.0
Th	0827	-0.3	-0.1
	1506	9.4	2.9
	2051	0.0	0.0
30	0321	10.3	3.1
F	0919	-0.8	-0.2
	1559	10.0	3.0
	2146	-0.4	-0.1
31	0414	10.5	3.2
Sa	1008	-1.1	-0.3
	1649	10.5	3.2
	2235	-0.6	-0.2

FEBRUARY

Day	Time h m	Height ft	Height m
1	0502	10.5	3.2
Su	1054	-1.1	-0.3
	1736	10.6	3.2
	2324	-0.6	-0.2
2	0549	10.2	3.1
M	1139	-0.8	-0.2
	1821	10.5	3.2
3	0010	-0.3	-0.1
Tu	0632	9.7	3.0
	1221	-0.3	-0.1
	1903	10.2	3.1
4	0055	0.2	0.1
W	0716	9.0	2.7
	1306	0.3	0.1
	1946	9.6	2.9
5	0143	0.8	0.2
Th	0759	8.3	2.5
	1348	1.1	0.3
	2030	9.1	2.8
6	0230	1.4	0.4
F	0844	7.6	2.3
	1436	1.8	0.5
	2115	8.5	2.6
7	0324	2.0	0.6
Sa	0935	7.1	2.2
	1530	2.4	0.7
	2206	8.1	2.5
8	0426	2.3	0.7
Su	1035	6.7	2.0
	1634	2.9	0.9
	2305	7.8	2.4
9	0535	2.4	0.7
M	1149	6.6	2.0
	1745	3.0	0.9
10	0009	7.7	2.3
Tu	0636	2.3	0.7
	1304	6.8	2.1
	1854	2.8	0.9
11	0110	7.9	2.4
W	0731	1.9	0.6
	1403	7.3	2.2
	1949	2.4	0.7
12	0203	8.2	2.5
Th	0816	1.5	0.5
	1450	7.8	2.4
	2032	1.9	0.6
13	0250	8.6	2.6
F	0853	1.1	0.3
	1528	8.3	2.5
	2112	1.4	0.4
14	0330	8.9	2.7
Sa	0929	0.7	0.2
	1603	8.8	2.7
	2151	1.0	0.3
15	0409	9.1	2.8
Su	1004	0.4	0.1
	1638	9.2	2.8
	2227	0.6	0.2
16	0446	9.2	2.8
M	1037	0.2	0.1
	1710	9.5	2.9
	2302	0.4	0.1
17	0520	9.1	2.8
Tu	1111	0.1	0.0
	1744	9.7	3.0
	2341	0.2	0.1
18	0557	9.0	2.7
W	1147	0.2	0.1
	1820	9.7	3.0
19	0019	0.3	0.1
Th	0634	8.7	2.7
	1226	0.3	0.1
	1900	9.7	3.0
20	0101	0.4	0.1
F	0716	8.4	2.6
	1309	0.6	0.2
	1943	9.5	2.9
21	0150	0.7	0.2
Sa	0802	8.0	2.4
	1356	1.0	0.3
	2033	9.2	2.8
22	0243	1.0	0.3
Su	0900	7.7	2.3
	1455	1.4	0.4
	2132	8.9	2.7
23	0347	1.2	0.4
M	1007	7.5	2.3
	1603	1.7	0.5
	2243	8.8	2.7
24	0457	1.3	0.4
Tu	1126	7.6	2.3
	1721	1.7	0.5
	2357	8.8	2.7
25	0609	1.0	0.3
W	1246	8.0	2.4
	1838	1.3	0.4
26	0110	9.1	2.8
Th	0715	0.5	0.2
	1355	8.8	2.7
	1944	0.6	0.2
27	0214	9.5	2.9
F	0811	-0.1	0.0
	1453	9.5	2.9
	2040	0.0	0.0
28	0309	9.9	3.0
Sa	0902	-0.6	-0.2
	1543	10.2	3.1
	2131	-0.5	-0.2

MARCH

Day	Time h m	Height ft	Height m
1	0358	10.1	3.1
Su	0949	-0.9	-0.3
	1628	10.5	3.2
	2217	-0.8	-0.2
2	0442	10.1	3.1
M	1032	-0.9	-0.3
	1710	10.6	3.2
	2302	-0.7	-0.2
3	0523	9.8	3.0
Tu	1114	-0.7	-0.2
	1751	10.5	3.2
	2344	-0.5	-0.2
4	0605	9.4	2.9
W	1154	-0.2	-0.1
	1828	10.1	3.1
5	0026	0.0	0.0
Th	0642	8.8	2.7
	1233	0.4	0.1
	1906	9.5	2.9
6	0108	0.6	0.2
F	0722	8.2	2.5
	1314	1.1	0.3
	1946	8.9	2.7
7	0151	1.3	0.4
Sa	0804	7.5	2.3
	1356	1.9	0.6
	2028	8.3	2.5
8	0239	1.9	0.6
Su	0852	7.0	2.1
	1446	2.5	0.8
	2118	7.8	2.4
9	0334	2.4	0.7
M	0951	6.6	2.0
	1548	3.0	0.9
	2219	7.5	2.3
10	0441	2.6	0.8
Tu	1105	6.5	2.0
	1706	3.2	1.0
	2326	7.4	2.3
11	0553	2.5	0.8
W	1222	6.8	2.1
	1822	2.9	0.9
12	0033	7.6	2.3
Th	0654	2.1	0.6
	1326	7.3	2.2
	1920	2.4	0.7
13	0131	7.9	2.4
F	0741	1.7	0.5
	1413	7.9	2.4
	2005	1.8	0.5
14	0219	8.3	2.5
Sa	0821	1.2	0.4
	1454	8.5	2.6
	2045	1.1	0.3
15	0301	8.7	2.7
Su	0856	0.7	0.2
	1530	9.1	2.8
	2122	0.5	0.2
16	0340	9.0	2.7
M	0931	0.3	0.1
	1605	9.6	2.9
	2159	0.1	0.0
17	0418	9.2	2.8
Tu	1007	0.0	0.0
	1641	10.0	3.0
	2236	-0.2	-0.1
18	0455	9.2	2.8
W	1044	-0.1	0.0
	1717	10.2	3.1
	2316	-0.4	-0.1
19	0535	9.1	2.8
Th	1122	-0.1	0.0
	1755	10.2	3.1
	2357	-0.3	-0.1
20	0613	8.8	2.7
F	1203	0.1	0.0
	1837	10.0	3.0
21	0040	0.0	0.0
Sa	0658	8.5	2.6
	1248	0.5	0.2
	1922	9.6	2.9
22	0130	0.4	0.1
Su	0748	8.1	2.5
	1340	1.0	0.3
	2017	9.2	2.8
23	0223	0.8	0.2
M	0849	7.8	2.4
	1441	1.5	0.5
	2118	8.7	2.7
24	0328	1.2	0.4
Tu	1001	7.6	2.3
	1553	1.8	0.5
	2231	8.5	2.6
25	0439	1.3	0.4
W	1121	7.8	2.4
	1715	1.7	0.5
	2346	8.5	2.6
26	0553	1.1	0.3
Th	1238	8.3	2.5
	1830	1.3	0.4
27	0059	8.7	2.7
F	0656	0.7	0.2
	1341	9.0	2.7
	1931	0.6	0.2
28	0158	9.1	2.8
Sa	0752	0.2	0.1
	1434	9.7	3.0
	2026	0.1	0.0
29	0251	9.4	2.9
Su	0840	-0.2	-0.1
	1520	10.2	3.1
	2112	-0.4	-0.1
30	0336	9.5	2.9
M	0925	-0.4	-0.1
	1603	10.4	3.2
	2156	-0.6	-0.2
31	0419	9.5	2.9
Tu	1007	-0.4	-0.1
	1640	10.4	3.2
	2237	-0.6	-0.2

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

LA UNION, EL SALVADOR, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	m	Day	Time h m	Height ft	m
1	0458	9.3	2.8	16	0431	9.2	2.8
W	1045	-0.2	-0.1	Th	1019	-0.2	-0.1
	1717	10.2	3.1		1651	10.5	3.2
	2316	-0.3	-0.1		2253	-0.7	-0.2
2	0535	9.0	2.7	17	0514	9.1	2.8
Th	1125	0.2	0.1	F	1102	-0.1	0.0
	1754	9.9	3.0		1734	10.5	3.2
	2354	0.1	0.0		2338	-0.6	-0.2
3	0612	8.5	2.6	18	0600	9.0	2.7
F	1203	0.8	0.2	Sa	1147	0.1	0.0
	1831	9.4	2.9		1821	10.2	3.1
4	0033	0.6	0.2	19	0024	-0.3	-0.1
Sa	0649	8.0	2.4	Su	0650	8.7	2.7
	1240	1.4	0.4		1237	0.5	0.2
	1908	8.8	2.7		1911	9.7	3.0
5	0114	1.2	0.4	20	0114	0.2	0.1
Su	0733	7.5	2.3	M	0745	8.4	2.6
	1322	2.0	0.6		1333	1.0	0.3
	1951	8.3	2.5		2007	9.2	2.8
6	0159	1.8	0.5	21	0210	0.7	0.2
M	0820	7.1	2.2	Tu	0847	8.2	2.5
	1410	2.6	0.8		1436	1.5	0.5
	2041	7.8	2.4		2113	8.7	2.7
7	0249	2.2	0.7	22	0313	1.1	0.3
Tu	0918	6.8	2.1	W	0957	8.1	2.5
	1510	3.0	0.9		1548	1.7	0.5
	2137	7.4	2.3		2222	8.4	2.6
8	0350	2.5	0.8	23	0422	1.3	0.4
W	1024	6.8	2.1	Th	1113	8.3	2.5
	1624	3.1	0.9		1705	1.7	0.5
	2243	7.3	2.2		2332	8.3	2.5
9	0457	2.5	0.8	24	0530	1.2	0.4
Th	1133	7.0	2.1	F	1220	8.7	2.7
	1738	2.9	0.9		1817	1.3	0.4
	2348	7.4	2.3				
10	0601	2.2	0.7	25	0038	8.4	2.6
F	1235	7.6	2.3	Sa	0633	1.0	0.3
	1839	2.3	0.7		1318	9.2	2.8
					1915	0.8	0.2
11	0047	7.7	2.3	26	0136	8.6	2.6
Sa	0654	1.8	0.5	Su	0726	0.7	0.2
	1326	8.2	2.5		1408	9.7	3.0
	1928	1.6	0.5		2005	0.4	0.1
12	0139	8.1	2.5	27	0229	8.8	2.7
Su	0737	1.3	0.4	M	0814	0.4	0.1
	1408	8.9	2.7		1453	10.0	3.0
	2011	0.9	0.3		2050	0.0	0.0
13	0224	8.5	2.6	28	0311	8.9	2.7
M	0819	0.8	0.2	Tu	0858	0.3	0.1
	1451	9.5	2.9		1534	10.1	3.1
	2051	0.3	0.1		2131	-0.1	0.0
14	0306	8.9	2.7	29	0352	8.9	2.7
Tu	0858	0.3	0.1	W	0938	0.3	0.1
	1530	10.0	3.0		1610	10.1	3.1
	2131	-0.2	-0.1		2210	-0.1	0.0
15	0351	9.1	2.8	30	0432	8.8	2.7
W	0938	0.0	0.0	Th	1018	0.5	0.2
	1610	10.4	3.2		1647	9.9	3.0
	2212	-0.6	-0.2		2250	0.1	0.0

MAY

Day	Time h m	Height ft	m	Day	Time h m	Height ft	m
1	0509	8.6	2.6	16	0459	9.3	2.8
F	1056	0.8	0.2	Sa	1046	0.0	0.0
	1723	9.6	2.9		1718	10.7	3.3
	2327	0.4	0.1		2320	-0.7	-0.2
2	0547	8.3	2.5	17	0551	9.3	2.8
Sa	1135	1.2	0.4	Su	1136	0.2	0.1
	1800	9.2	2.8		1809	10.4	3.2
3	0004	0.8	0.2	18	0010	-0.4	-0.1
Su	0626	8.0	2.4	M	0645	9.2	2.8
	1215	1.7	0.5		1229	0.5	0.2
	1839	8.8	2.7		1903	9.9	3.0
4	0045	1.2	0.4	19	0101	0.0	0.0
M	0709	7.7	2.3	Tu	0743	9.0	2.7
	1257	2.1	0.6		1327	1.0	0.3
	1922	8.4	2.6		1959	9.4	2.9
5	0125	1.6	0.5	20	0156	0.5	0.2
Tu	0756	7.5	2.3	W	0844	8.9	2.7
	1343	2.5	0.8		1430	1.4	0.4
	2010	7.9	2.4		2100	8.9	2.7
6	0212	2.0	0.6	21	0255	0.9	0.3
W	0849	7.3	2.2	Th	0948	8.8	2.7
	1439	2.8	0.9		1538	1.6	0.5
	2103	7.6	2.3		2204	8.5	2.6
7	0304	2.3	0.7	22	0401	1.2	0.4
Th	0948	7.4	2.3	F	1052	8.9	2.7
	1540	2.9	0.9		1649	1.6	0.5
	2200	7.5	2.3		2309	8.2	2.5
8	0402	2.3	0.7	23	0504	1.4	0.4
F	1045	7.6	2.3	Sa	1153	9.1	2.8
	1649	2.7	0.8		1754	1.5	0.5
	2259	7.5	2.3				
9	0503	2.2	0.7	24	0011	8.1	2.5
Sa	1142	8.0	2.4	Su	0604	1.4	0.4
	1750	2.2	0.7		1249	9.3	2.8
	2358	7.7	2.3		1851	1.2	0.4
10	0558	1.9	0.6	25	0110	8.2	2.5
Su	1235	8.6	2.6	M	0659	1.3	0.4
	1844	1.6	0.5		1339	9.5	2.9
					1941	0.9	0.3
11	0054	8.0	2.4	26	0203	8.2	2.5
M	0649	1.4	0.4	Tu	0749	1.2	0.4
	1323	9.2	2.8		1424	9.6	2.9
	1933	0.9	0.3		2026	0.7	0.2
12	0145	8.4	2.6	27	0248	8.3	2.5
Tu	0736	0.9	0.3	W	0831	1.1	0.3
	1409	9.9	3.0		1504	9.7	3.0
	2017	0.3	0.1		2107	0.6	0.2
13	0234	8.7	2.7	28	0330	8.4	2.6
W	0824	0.5	0.2	Th	0913	1.1	0.3
	1456	10.3	3.1		1544	9.7	3.0
	2103	-0.3	-0.1		2146	0.5	0.2
14	0322	9.0	2.7	29	0409	8.4	2.6
Th	0912	0.1	0.0	F	0954	1.2	0.4
	1542	10.7	3.3		1620	9.6	2.9
	2149	-0.6	-0.2		2226	0.6	0.2
15	0410	9.2	2.8	30	0450	8.4	2.6
F	0958	-0.1	0.0	Sa	1033	1.4	0.4
	1631	10.8	3.3		1658	9.4	2.9
	2234	-0.8	-0.2		2303	0.7	0.2
				31	0528	8.3	2.5
				Su	1112	1.6	0.5
					1736	9.2	2.8
					2340	0.9	0.3

JUNE

Day	Time h m	Height ft	m	Day	Time h m	Height ft	m
1	0607	8.2	2.5	16	0636	9.8	3.0
M	1152	1.9	0.6	Tu	1221	0.3	0.1
	1816	8.9	2.7		1853	10.2	3.1
2	0018	1.2	0.4	17	0047	-0.2	-0.1
Tu	0649	8.1	2.5	W	0733	9.8	3.0
	1234	2.1	0.6		1317	0.7	0.2
	1858	8.6	2.6		1946	9.7	3.0
3	0058	1.5	0.5	18	0138	0.3	0.1
W	0733	8.0	2.4	Th	0827	9.6	2.9
	1319	2.3	0.7		1415	1.1	0.3
	1943	8.3	2.5		2041	9.1	2.8
4	0139	1.7	0.5	19	0233	0.8	0.2
Th	0820	8.0	2.4	F	0924	9.4	2.9
	1407	2.5	0.8		1516	1.5	0.5
	2028	8.0	2.4		2138	8.5	2.6
5	0223	1.9	0.6	20	0332	1.3	0.4
F	0908	8.1	2.5	Sa	1022	9.3	2.8
	1500	2.5	0.8		1622	1.7	0.5
	2121	7.8	2.4		2238	8.1	2.5
6	0315	2.0	0.6	21	0432	1.7	0.5
Sa	1000	8.3	2.5	Su	1119	9.2	2.8
	1600	2.4	0.7		1725	1.8	0.5
	2214	7.7	2.3		2337	7.8	2.4
7	0409	2.0	0.6	22	0532	1.9	0.6
Su	1052	8.6	2.6	M	1214	9.1	2.8
	1701	2.1	0.6		1822	1.8	0.5
	2310	7.7	2.3				
8	0507	1.8	0.5	23	0038	7.7	2.3
M	1145	9.0	2.7	Tu	0628	2.0	0.6
	1801	1.6	0.5		1307	9.1	2.8
					1916	1.6	0.5
9	0007	7.9	2.4	24	0136	7.7	2.3
Tu	0606	1.5	0.5	W	0720	1.9	0.6
	1239	9.5	2.9		1355	9.2	2.8
	1856	1.0	0.3		2003	1.4	0.4
10	0105	8.2	2.5	25	0226	7.8	2.4
W	0702	1.1	0.3	Th	0808	1.9	0.6
	1334	10.0	3.0		1439	9.3	2.8
	1947	0.4	0.1		2045	1.2	0.4
11	0203	8.6	2.6	26	0311	8.0	2.4
Th	0756	0.7	0.2	F	0853	1.8	0.5
	1429	10.5	3.2		1519	9.4	2.9
	2038	-0.1	0.0		2125	1.1	0.3
12	0258	9.0	2.7	27	0353	8.2	2.5
F	0848	0.3	0.1	Sa	0935	1.7	0.5
	1520	10.8	3.3		1559	9.4	2.9
	2127	-0.5	-0.2		2204	1.0	0.3
13	0354	9.4	2.9	28	0433	8.4	2.6
Sa	0941	0.1	0.0	Su	1015	1.7	0.5
	1612	10.9	3.3		1637	9.4	2.9
	2216	-0.7	-0.2		2240	0.9	0.3
14	0448	9.7	3.0	29	0510	8.5	2.6
Su	1034	0.0	0.0	M	1053	1.7	0.5
	1706	10.9	3.3		1715	9.3	2.8
	2306	-0.7	-0.2		2317	1.0	0.3
15	0543	9.8	3.0	30	0548	8.5	2.6
M	1126	0.1	0.0	Tu	1132	1.7	0.5
	1759	10.6	3.2		1754	9.1	2.8
	2355	-0.5	-0.2		2353	1.1	0.3

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

Day	Time	Height	
	h m	ft	m
1	0626	8.6	2.6
W	1212	1.8	0.5
	1832	8.9	2.7
2	0029	1.2	0.4
Th	0706	8.6	2.6
	1253	1.9	0.6
	1911	8.6	2.6
3	0107	1.4	0.4
F	0746	8.6	2.6
	1335	2.0	0.6
	1954	8.3	2.5
4	0146	1.6	0.5
Sa	0828	8.7	2.7
	1423	2.1	0.6
	2040	8.1	2.5
5	0231	1.7	0.5
Su	0917	8.8	2.7
	1517	2.1	0.6
	2131	7.9	2.4
6	0326	1.8	0.5
M	1008	9.0	2.7
	1617	2.0	0.6
	2226	7.8	2.4
7	0423	1.8	0.5
Tu	1104	9.3	2.8
	1719	1.7	0.5
	2327	7.9	2.4
8	0527	1.6	0.5
W	1204	9.6	2.9
	1822	1.3	0.4
9	0033	8.1	2.5
Th	0631	1.3	0.4
	1307	10.0	3.0
	1920	0.7	0.2
10	0139	8.6	2.6
F	0734	0.9	0.3
	1405	10.4	3.2
	2016	0.1	0.0
11	0242	9.1	2.8
Sa	0832	0.4	0.1
	1504	10.7	3.3
	2109	-0.3	-0.1
12	0341	9.7	3.0
Su	0928	0.0	0.0
	1559	11.0	3.4
	2200	-0.7	-0.2
13	0436	10.1	3.1
M	1021	-0.2	-0.1
	1652	11.0	3.4
	2249	-0.8	-0.2
14	0528	10.4	3.2
Tu	1114	-0.2	-0.1
	1744	10.8	3.3
	2338	-0.7	-0.2
15	0620	10.5	3.2
W	1205	0.0	0.0
	1834	10.4	3.2
16	0026	-0.3	-0.1
Th	0711	10.4	3.2
	1258	0.4	0.1
	1925	9.8	3.0
17	0114	0.2	0.1
F	0802	10.1	3.1
	1350	0.9	0.3
	2013	9.2	2.8
18	0206	0.8	0.2
Sa	0854	9.7	3.0
	1445	1.4	0.4
	2104	8.5	2.6
19	0257	1.4	0.4
Su	0945	9.3	2.8
	1545	1.9	0.6
	2159	7.9	2.4
20	0354	2.0	0.6
M	1039	8.9	2.7
	1646	2.2	0.7
	2301	7.5	2.3
21	0455	2.4	0.7
Tu	1137	8.7	2.7
	1750	2.3	0.7
22	0004	7.3	2.2
W	0558	2.6	0.8
	1235	8.6	2.6
	1851	2.2	0.7
23	0112	7.3	2.2
Th	0657	2.5	0.8
	1328	8.7	2.7
	1941	2.0	0.6
24	0205	7.6	2.3
F	0749	2.3	0.7
	1416	8.9	2.7
	2026	1.7	0.5
25	0256	7.9	2.4
Sa	0834	2.1	0.6
	1458	9.1	2.8
	2106	1.4	0.4
26	0336	8.2	2.5
Su	0917	1.8	0.5
	1539	9.3	2.8
	2143	1.1	0.3
27	0414	8.5	2.6
M	0956	1.6	0.5
	1618	9.4	2.9
	2218	1.0	0.3
28	0449	8.8	2.7
Tu	1033	1.4	0.4
	1654	9.4	2.9
	2251	0.9	0.3
29	0523	9.0	2.7
W	1110	1.3	0.4
	1728	9.3	2.8
	2325	0.9	0.3
30	0557	9.1	2.8
Th	1147	1.3	0.4
	1805	9.1	2.8
	2359	0.9	0.3
31	0633	9.2	2.8
F	1224	1.3	0.4
	1842	8.9	2.7

AUGUST

Day	Time	Height	
	h m	ft	m
1	0034	1.1	0.3
Sa	0711	9.2	2.8
	1306	1.4	0.4
	1921	8.6	2.6
2	0114	1.2	0.4
Su	0751	9.2	2.8
	1351	1.6	0.5
	2004	8.2	2.5
3	0159	1.4	0.4
M	0838	9.2	2.8
	1442	1.7	0.5
	2052	8.0	2.4
4	0251	1.6	0.5
Tu	0931	9.1	2.8
	1540	1.8	0.5
	2152	7.8	2.4
5	0351	1.8	0.5
W	1033	9.2	2.8
	1647	1.8	0.5
	2259	7.8	2.4
6	0501	1.8	0.5
Th	1139	9.4	2.9
	1753	1.5	0.5
7	0011	8.1	2.5
F	0612	1.5	0.5
	1247	9.7	3.0
	1859	0.9	0.3
8	0126	8.6	2.6
Sa	0720	1.0	0.3
	1352	10.1	3.1
	1957	0.3	0.1
9	0229	9.3	2.8
Su	0821	0.3	0.1
	1451	10.5	3.2
	2053	-0.3	-0.1
10	0328	10.0	3.0
M	0915	-0.2	-0.1
	1546	10.8	3.3
	2143	-0.7	-0.2
11	0420	10.5	3.2
Tu	1007	-0.5	-0.2
	1636	10.9	3.3
	2230	-0.8	-0.2
12	0509	10.8	3.3
W	1057	-0.6	-0.2
	1725	10.7	3.3
	2315	-0.7	-0.2
13	0555	10.8	3.3
Th	1145	-0.4	-0.1
	1810	10.3	3.1
14	0001	-0.4	-0.1
F	0642	10.6	3.2
	1232	0.1	0.0
	1855	9.7	3.0
15	0047	0.2	0.1
Sa	0727	10.1	3.1
	1319	0.7	0.2
	1942	9.0	2.7
16	0133	0.9	0.3
Su	0815	9.6	2.9
	1410	1.4	0.4
	2028	8.3	2.5
17	0220	1.6	0.5
M	0902	9.0	2.7
	1503	2.0	0.6
	2120	7.7	2.3
18	0315	2.3	0.7
Tu	0957	8.5	2.6
	1606	2.5	0.8
	2219	7.2	2.2
19	0419	2.8	0.9
W	1057	8.1	2.5
	1714	2.7	0.8
	2330	7.0	2.1
20	0530	3.0	0.9
Th	1158	8.1	2.5
	1819	2.6	0.8
21	0043	7.1	2.2
F	0635	2.8	0.9
	1259	8.2	2.5
	1915	2.3	0.7
22	0144	7.5	2.3
Sa	0731	2.5	0.8
	1352	8.5	2.6
	2003	1.9	0.6
23	0229	7.9	2.4
Su	0816	2.1	0.6
	1435	8.8	2.7
	2042	1.5	0.5
24	0311	8.4	2.6
M	0856	1.6	0.5
	1517	9.1	2.8
	2117	1.2	0.4
25	0346	8.8	2.7
Tu	0933	1.2	0.4
	1552	9.4	2.9
	2149	0.9	0.3
26	0419	9.2	2.8
W	1009	0.9	0.3
	1628	9.5	2.9
	2222	0.7	0.2
27	0454	9.5	2.9
Th	1045	0.7	0.2
	1703	9.4	2.9
	2255	0.6	0.2
28	0527	9.6	2.9
F	1119	0.7	0.2
	1738	9.2	2.8
	2330	0.6	0.2
29	0603	9.6	2.9
Sa	1157	0.7	0.2
	1813	9.0	2.7
30	0005	0.8	0.2
Su	0637	9.6	2.9
	1237	0.9	0.3
	1852	8.7	2.7
31	0045	1.0	0.3
M	0719	9.4	2.9
	1322	1.1	0.3
	1935	8.3	2.5

SEPTEMBER

Day	Time	Height	
	h m	ft	m
1	0132	1.3	0.4
Tu	0808	9.2	2.8
	1412	1.4	0.4
	2028	8.0	2.4
2	0225	1.6	0.5
W	0905	9.0	2.7
	1512	1.7	0.5
	2131	7.8	2.4
3	0331	1.9	0.6
Th	1011	8.9	2.7
	1620	1.8	0.5
	2243	7.8	2.4
4	0446	1.9	0.6
F	1123	9.0	2.7
	1733	1.6	0.5
5	0002	8.2	2.5
Sa	0602	1.5	0.5
	1235	9.3	2.8
	1841	1.1	0.3
6	0115	8.8	2.7
Su	0710	0.9	0.3
	1341	9.7	3.0
	1941	0.4	0.1
7	0216	9.6	2.9
M	0808	0.2	0.1
	1438	10.2	3.1
	2034	-0.2	-0.1
8	0309	10.3	3.1
Tu	0901	-0.4	-0.1
	1529	10.5	3.2
	2122	-0.6	-0.2
9	0358	10.8	3.3
W	0950	-0.7	-0.2
	1617	10.6	3.2
	2207	-0.7	-0.2
10	0443	11.0	3.4
Th	1035	-0.8	-0.2
	1700	10.4	3.2
	2251	-0.6	-0.2
11	0527	10.9	3.3
F	1120	-0.5	-0.2
	1744	10.0	3.0
	2334	-0.2	-0.1
12	0609	10.5	3.2
Sa	1203	0.0	0.0
	1826	9.5	2.9
13	0016	0.4	0.1
Su	0650	9.9	3.0
	1246	0.6	0.2
	1908	8.8	2.7
14	0058	1.1	0.3
M	0733	9.3	2.8
	1332	1.4	0.4
	1951	8.1	2.5
15	0145	1.9	0.6
Tu	0818	8.6	2.6
	1420	2.1	0.6
	2041	7.5	2.3
16	0236	2.5	0.8
W	0913	8.1	2.5
	1518	2.6	0.8
	2140	7.1	2.2
17	0341	3.0	0.9
Th	1013	7.7	2.3
	1628	2.9	0.9
	2253	6.9	2.1
18	0500	3.2	1.0
F	1119	7.6	2.3
	1742	2.9	0.9
19	0006	7.1	2.2
Sa	0611	2.9	0.9
	1222	7.8	2.4
	1841	2.5	0.8
20	0105	7.5	2.3
Su	0705	2.5	0.8
	1320	8.2	2.5
	1928	2.1	0.6
21	0152	8.1	2.5
M	0749	1.9	0.6
	1405	8.6	2.6
	2008	1.6	0.5
22	0232	8.6	2.6
Tu	0829	1.3	0.4
	1445	8.9	2.7
	2043	1.2	0.4
23	0311	9.2	2.8
W	0906	0.8	0.2
	1523	9.2	2.8
	2117	0.9	0.3
24	0343	9.6	2.9
Th	0941	0.4	0.1
	1559	9.4	2.9
	2151	0.6	0.2
25	0420	9.9	3.0
F	1016	0.2	0.1
	1635	9.4	2.9
	2225	0.4	0.1
26	0454	10.0	3.0
Sa	1053	0.1	0.0
	1712	9.3	2.8
	2302	0.4	0.1
27	0531	10.0	3.0
Su	1131	0.1	0.0
	1749	9.0	2.7
	2341	0.6	0.2
28	0612	9.8	3.0
M	1213	0.4	0.1
	1831	8.7	2.7
29	0024	0.8	0.2
Tu	0657	9.6	2.9
	1301	0.7	0.2
	1917	8.4	2.6
30	0114	1.2	0.4
W	0748	9.2	2.8
	1351	1.2	0.4
	2015	8.1	2.5

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

LA UNION, EL SALVADOR, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0212	1.6	0.5	16	0303	3.0	0.9
Th	0848	8.8	2.7	F	0931	7.5	2.3
	1452	1.5	0.5		1535	2.8	0.9
	2121	7.9	2.4		2211	7.1	2.2
2	0320	1.9	0.6	17	0417	3.1	0.9
F	0958	8.6	2.6	Sa	1035	7.4	2.3
	1601	1.7	0.5		1644	2.9	0.9
	2238	8.0	2.4		2320	7.3	2.2
3	0438	1.8	0.5	18	0529	2.9	0.9
Sa	1113	8.6	2.6	Su	1139	7.5	2.3
	1713	1.6	0.5		1750	2.7	0.8
	2354	8.5	2.6				
4	0554	1.4	0.4	19	0019	7.7	2.3
Su	1223	8.9	2.7	M	0627	2.4	0.7
	1822	1.1	0.3		1235	7.8	2.4
					1841	2.3	0.7
5	0102	9.1	2.8	20	0107	8.3	2.5
M	0659	0.7	0.2	Tu	0713	1.8	0.5
	1326	9.3	2.8		1323	8.2	2.5
	1920	0.6	0.2		1923	1.8	0.5
6	0157	9.8	3.0	21	0149	8.8	2.7
Tu	0755	0.1	0.0	W	0755	1.2	0.4
	1421	9.7	3.0		1409	8.6	2.6
	2013	0.1	0.0		2004	1.3	0.4
7	0248	10.4	3.2	22	0229	9.4	2.9
W	0843	-0.4	-0.1	Th	0834	0.6	0.2
	1510	10.0	3.0		1450	8.9	2.7
	2058	-0.2	-0.1		2042	0.9	0.3
8	0333	10.7	3.3	23	0309	9.9	3.0
Th	0930	-0.7	-0.2	F	0911	0.1	0.0
	1553	10.0	3.0		1530	9.2	2.8
	2143	-0.3	-0.1		2119	0.6	0.2
9	0416	10.8	3.3	24	0346	10.2	3.1
F	1011	-0.7	-0.2	Sa	0950	-0.2	-0.1
	1635	9.9	3.0		1610	9.3	2.8
	2225	-0.2	-0.1		2159	0.4	0.1
10	0457	10.6	3.2	25	0427	10.3	3.1
Sa	1053	-0.4	-0.1	Su	1029	-0.3	-0.1
	1716	9.6	2.9		1650	9.3	2.8
	2307	0.2	0.1		2239	0.3	0.1
11	0536	10.2	3.1	26	0509	10.3	3.1
Su	1134	0.0	0.0	M	1111	-0.3	-0.1
	1757	9.1	2.8		1733	9.1	2.8
	2347	0.7	0.2		2323	0.4	0.1
12	0616	9.6	2.9	27	0552	10.0	3.0
M	1215	0.6	0.2	Tu	1155	0.0	0.0
	1837	8.6	2.6		1818	8.9	2.7
13	0029	1.4	0.4	28	0010	0.7	0.2
Tu	0657	9.0	2.7	W	0642	9.7	3.0
	1257	1.3	0.4		1242	0.4	0.1
	1921	8.0	2.4		1911	8.7	2.7
14	0114	2.0	0.6	29	0103	1.1	0.3
W	0743	8.4	2.6	Th	0737	9.2	2.8
	1343	1.9	0.6		1335	0.8	0.2
	2007	7.5	2.3		2010	8.5	2.6
15	0204	2.6	0.8	30	0204	1.5	0.5
Th	0831	7.9	2.4	F	0839	8.8	2.7
	1433	2.5	0.8		1436	1.3	0.4
	2105	7.2	2.2		2118	8.4	2.6
				31	0313	1.7	0.5
				Sa	0948	8.5	2.6
					1542	1.5	0.5
					2229	8.5	2.6

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0428	1.6	0.5	16	0434	2.7	0.8
Su	1058	8.4	2.6	M	1046	7.4	2.3
	1653	1.5	0.5		1645	2.6	0.8
	2340	8.9	2.7		2321	8.0	2.4
2	0540	1.3	0.4	17	0535	2.3	0.7
M	1206	8.6	2.6	Tu	1143	7.6	2.3
	1759	1.3	0.4		1740	2.4	0.7
3	0041	9.4	2.9	18	0014	8.5	2.6
Tu	0644	0.8	0.2	W	0627	1.8	0.5
	1307	8.8	2.7		1239	7.9	2.4
	1858	0.9	0.3		1833	2.0	0.6
4	0136	9.8	3.0	19	0102	9.0	2.7
W	0736	0.3	0.1	Th	0715	1.2	0.4
	1400	9.1	2.8		1328	8.2	2.5
	1949	0.6	0.2		1920	1.5	0.5
5	0224	10.2	3.1	20	0149	9.5	2.9
Th	0824	-0.1	0.0	F	0758	0.6	0.2
	1450	9.3	2.8		1416	8.6	2.6
	2036	0.4	0.1		2006	1.0	0.3
6	0309	10.3	3.1	21	0234	10.0	3.0
F	0908	-0.3	-0.1	Sa	0842	0.0	0.0
	1533	9.3	2.8		1502	8.9	2.7
	2119	0.3	0.1		2050	0.6	0.2
7	0350	10.3	3.1	22	0319	10.3	3.1
Sa	0950	-0.3	-0.1	Su	0925	-0.3	-0.1
	1614	9.3	2.8		1548	9.2	2.8
	2200	0.4	0.1		2136	0.3	0.1
8	0428	10.1	3.1	23	0404	10.5	3.2
Su	1029	-0.1	0.0	M	1010	-0.5	-0.2
	1655	9.1	2.8		1635	9.3	2.8
	2242	0.7	0.2		2223	0.2	0.1
9	0507	9.8	3.0	24	0451	10.4	3.2
M	1109	0.2	0.1	Tu	1054	-0.6	-0.2
	1733	8.8	2.7		1723	9.4	2.9
	2322	1.1	0.3		2312	0.3	0.1
10	0546	9.4	2.9	25	0541	10.2	3.1
Tu	1147	0.7	0.2	W	1141	-0.4	-0.1
	1813	8.5	2.6		1813	9.4	2.9
11	0003	1.6	0.5	26	0002	0.4	0.1
W	0626	8.9	2.7	Th	0632	9.8	3.0
	1228	1.2	0.4		1229	0.0	0.0
	1855	8.1	2.5		1909	9.3	2.8
12	0048	2.0	0.6	27	0057	0.8	0.2
Th	0709	8.4	2.6	F	0727	9.4	2.9
	1309	1.7	0.5		1322	0.4	0.1
	1942	7.8	2.4		2006	9.1	2.8
13	0133	2.5	0.8	28	0156	1.1	0.3
F	0756	7.9	2.4	Sa	0828	8.9	2.7
	1354	2.1	0.6		1418	0.9	0.3
	2033	7.6	2.3		2108	9.1	2.8
14	0228	2.8	0.9	29	0300	1.3	0.4
Sa	0849	7.6	2.3	Su	0930	8.5	2.6
	1447	2.5	0.8		1520	1.3	0.4
	2128	7.6	2.3		2211	9.1	2.8
15	0329	2.9	0.9	30	0411	1.4	0.4
Su	0947	7.4	2.3	M	1036	8.2	2.5
	1543	2.6	0.8		1625	1.5	0.5
	2225	7.7	2.3		2313	9.2	2.8

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0520	1.3	0.4	16	0439	2.2	0.7
Tu	1142	8.2	2.5	W	1050	7.4	2.3
	1730	1.5	0.5		1641	2.3	0.7
					2321	8.6	2.6
2	0015	9.3	2.8	17	0537	1.8	0.5
W	0621	1.0	0.3	Th	1150	7.5	2.3
	1243	8.2	2.5		1741	2.1	0.6
	1830	1.4	0.4				
3	0110	9.5	2.9	18	0015	9.0	2.7
Th	0715	0.7	0.2	F	0633	1.3	0.4
	1341	8.4	2.6		1246	7.8	2.4
	1926	1.3	0.4		1839	1.7	0.5
4	0200	9.7	3.0	19	0110	9.5	2.9
F	0803	0.5	0.2	Sa	0726	0.7	0.2
	1431	8.5	2.6		1344	8.2	2.5
	2013	1.1	0.3		1934	1.2	0.4
5	0244	9.7	3.0	20	0205	9.9	3.0
Sa	0848	0.3	0.1	Su	0815	0.1	0.0
	1517	8.6	2.6		1439	8.7	2.7
	2058	1.1	0.3		2028	0.7	0.2
6	0326	9.7	3.0	21	0256	10.3	3.1
Su	0930	0.2	0.1	M	0904	-0.4	-0.1
	1558	8.7	2.7		1533	9.2	2.8
	2141	1.1	0.3		2119	0.3	0.1
7	0407	9.6	2.9	22	0348	10.5	3.2
M	1008	0.3	0.1	Tu	0951	-0.7	-0.2
	1639	8.7	2.7		1624	9.6	2.9
	2221	1.2	0.4		2211	0.0	0.0
8	0444	9.4	2.9	23	0440	10.6	3.2
Tu	1047	0.4	0.1	W	1039	-0.8	-0.2
	1716	8.6	2.6		1714	9.9	3.0
	2302	1.3	0.4		2302	-0.1	0.0
9	0523	9.2	2.8	24	0531	10.4	3.2
W	1125	0.7	0.2	Th	1127	-0.8	-0.2
	1754	8.5	2.6		1806	10.0	3.0
	2344	1.6	0.5		2354	0.0	0.0
10	0600	8.9	2.7	25	0621	10.1	3.1
Th	1202	1.0	0.3	F	1215	-0.5	-0.2
	1833	8.4	2.6		1858	10.0	3.0
11	0024	1.8	0.5	26	0046	0.2	0.1
F	0642	8.5	2.6	Sa	0714	9.6	2.9
	1240	1.3	0.4		1306	-0.1	0.0
	1915	8.3	2.5		1951	9.9	3.0
12	0106	2.1	0.6	27	0142	0.5	0.2
Sa	0725	8.2	2.5	Su	0809	9.1	2.8
	1319	1.7	0.5		1358	0.5	0.2
	1959	8.2	2.5		2046	9.6	2.9
13	0154	2.3	0.7	28	0241	0.9	0.3
Su	0810	7.8	2.4	M	0905	8.5	2.6
	1402	2.0	0.6		1455	1.0	0.3
	2044	8.1	2.5		2142	9.4	2.9
14	0243	2.4	0.7	29	0344	1.3	0.4
M	0900	7.6	2.3	Tu	1005	8.0	2.4
	1450	2.2	0.7		1555	1.5	0.5
	2134	8.2	2.5		2242	9.1	2.8
15	0339	2.4	0.7	30	0451	1.5	0.5
Tu	0953	7.4	2.3	W	1110	7.7	2.3
	1545	2.3	0.7		1659	1.8	0.5
	2227	8.3	2.5		2342	9.0	2.7
				31	0554	1.5	0.5
				Th	1219	7.6	2.3
					1803	2.0	0.6

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height	
	h m	ft	m
1	0300	4.2	1.3
Th	0935	-0.6	-0.2
	1531	3.0	0.9
	2126	-0.6	-0.2
2	0354	4.2	1.3
F	1024	-0.8	-0.2
	1629	3.3	1.0
	2226	-0.6	-0.2
3	0448	4.1	1.2
Sa	1113	-0.9	-0.3
	1723	3.5	1.1
	2325	-0.5	-0.2
4	0540	3.9	1.2
Su	1201	-0.9	-0.3
	1819	3.6	1.1
5	0024	-0.4	-0.1
M	0630	3.7	1.1
	1251	-0.8	-0.2
	1912	3.7	1.1
6	0121	-0.3	-0.1
Tu	0722	3.3	1.0
	1338	-0.7	-0.2
	2005	3.7	1.1
7	0221	-0.1	0.0
W	0815	3.0	0.9
	1426	-0.5	-0.2
	2058	3.6	1.1
8	0321	0.1	0.0
Th	0906	2.7	0.8
	1514	-0.3	-0.1
	2153	3.6	1.1
9	0421	0.2	0.1
F	1002	2.4	0.7
	1603	-0.1	0.0
	2245	3.5	1.1
10	0521	0.3	0.1
Sa	1100	2.2	0.7
	1653	0.1	0.0
	2340	3.4	1.0
11	0620	0.3	0.1
Su	1159	2.1	0.6
	1744	0.2	0.1
12	0031	3.4	1.0
M	0715	0.3	0.1
	1257	2.1	0.6
	1836	0.3	0.1
13	0121	3.4	1.0
Tu	0804	0.2	0.1
	1350	2.2	0.7
	1929	0.3	0.1
14	0206	3.5	1.1
W	0849	0.1	0.0
	1440	2.3	0.7
	2017	0.3	0.1
15	0251	3.5	1.1
Th	0931	0.0	0.0
	1525	2.4	0.7
	2107	0.2	0.1

Day	Time	Height	
	h m	ft	m
16	0335	3.5	1.1
F	1010	-0.1	0.0
	1608	2.6	0.8
	2152	0.2	0.1
17	0417	3.5	1.1
Sa	1045	-0.2	-0.1
	1648	2.8	0.9
	2240	0.1	0.0
18	0456	3.4	1.0
Su	1120	-0.2	-0.1
	1728	2.9	0.9
	2323	0.1	0.0
19	0535	3.3	1.0
M	1153	-0.2	-0.1
	1804	3.1	0.9
20	0009	0.1	0.0
Tu	0611	3.1	0.9
	1224	-0.2	-0.1
	1843	3.3	1.0
21	0052	0.1	0.0
W	0646	2.9	0.9
	1256	-0.2	-0.1
	1923	3.4	1.0
22	0138	0.2	0.1
Th	0725	2.7	0.8
	1331	-0.3	-0.1
	2008	3.6	1.1
23	0228	0.3	0.1
F	0806	2.6	0.8
	1409	-0.3	-0.1
	2053	3.7	1.1
24	0319	0.3	0.1
Sa	0851	2.4	0.7
	1453	-0.3	-0.1
	2143	3.8	1.2
25	0417	0.3	0.1
Su	0946	2.3	0.7
	1546	-0.3	-0.1
	2241	3.8	1.2
26	0517	0.3	0.1
M	1049	2.3	0.7
	1646	-0.2	-0.1
	2341	3.9	1.2
27	0620	0.2	0.1
Tu	1157	2.4	0.7
	1754	-0.2	-0.1
28	0043	3.9	1.2
W	0721	0.0	0.0
	1308	2.6	0.8
	1903	-0.3	-0.1
29	0144	3.9	1.2
Th	0817	-0.2	-0.1
	1415	2.9	0.9
	2012	-0.3	-0.1
30	0243	4.0	1.2
F	0912	-0.4	-0.1
	1515	3.2	1.0
	2118	-0.4	-0.1
31	0340	4.0	1.2
Sa	1005	-0.6	-0.2
	1613	3.5	1.1
	2219	-0.5	-0.2

FEBRUARY

Day	Time	Height	
	h m	ft	m
1	0433	3.9	1.2
Su	1052	-0.8	-0.2
	1709	3.8	1.2
	2316	-0.5	-0.2
2	0523	3.8	1.2
M	1139	-0.8	-0.2
	1800	3.9	1.2
3	0010	-0.4	-0.1
Tu	0613	3.6	1.1
	1226	-0.8	-0.2
	1850	4.0	1.2
4	0104	-0.3	-0.1
W	0659	3.3	1.0
	1309	-0.6	-0.2
	1938	3.9	1.2
5	0157	-0.1	0.0
Th	0748	3.0	0.9
	1354	-0.4	-0.1
	2027	3.8	1.2
6	0250	0.1	0.0
F	0836	2.8	0.9
	1437	-0.2	-0.1
	2115	3.6	1.1
7	0343	0.3	0.1
Sa	0924	2.5	0.8
	1524	0.0	0.0
	2205	3.5	1.1
8	0438	0.4	0.1
Su	1018	2.3	0.7
	1609	0.2	0.1
	2256	3.3	1.0
9	0534	0.5	0.2
M	1115	2.2	0.7
	1702	0.4	0.1
	2349	3.3	1.0
10	0633	0.5	0.2
Tu	1215	2.1	0.6
	1759	0.5	0.2
11	0043	3.2	1.0
W	0725	0.4	0.1
	1313	2.2	0.7
	1856	0.5	0.2
12	0135	3.3	1.0
Th	0814	0.3	0.1
	1406	2.3	0.7
	1955	0.4	0.1
13	0225	3.3	1.0
F	0857	0.2	0.1
	1454	2.6	0.8
	2048	0.3	0.1
14	0310	3.3	1.0
Sa	0936	0.1	0.0
	1539	2.8	0.9
	2136	0.2	0.1
15	0353	3.4	1.0
Su	1013	0.0	0.0
	1619	3.1	0.9
	2224	0.1	0.0

Day	Time	Height	
	h m	ft	m
16	0432	3.3	1.0
M	1046	-0.1	0.0
	1659	3.3	1.0
	2308	0.0	0.0
17	0512	3.2	1.0
Tu	1119	-0.2	-0.1
	1739	3.6	1.1
	2353	0.0	0.0
18	0548	3.1	0.9
W	1153	-0.3	-0.1
	1816	3.8	1.2
19	0035	0.0	0.0
Th	0626	3.0	0.9
	1225	-0.3	-0.1
	1857	3.9	1.2
20	0119	0.1	0.0
F	0702	2.8	0.9
	1301	-0.3	-0.1
	1939	4.0	1.2
21	0204	0.2	0.1
Sa	0744	2.7	0.8
	1344	-0.3	-0.1
	2026	4.0	1.2
22	0253	0.2	0.1
Su	0829	2.6	0.8
	1431	-0.3	-0.1
	2117	3.9	1.2
23	0349	0.3	0.1
M	0925	2.5	0.8
	1525	-0.2	-0.1
	2215	3.8	1.2
24	0449	0.3	0.1
Tu	1029	2.5	0.8
	1630	-0.1	0.0
	2317	3.7	1.1
25	0553	0.3	0.1
W	1141	2.6	0.8
	1743	0.0	0.0
26	0024	3.7	1.1
Th	0655	0.1	0.0
	1255	2.9	0.9
	1858	0.0	0.0
27	0127	3.6	1.1
F	0753	-0.1	0.0
	1403	3.2	1.0
	2009	-0.1	0.0
28	0227	3.6	1.1
Sa	0848	-0.3	-0.1
	1503	3.5	1.1
	2112	-0.2	-0.1

MARCH

Day	Time	Height	
	h m	ft	m
1	0325	3.7	1.1
Su	0939	-0.5	-0.2
	1557	3.8	1.2
	2210	-0.3	-0.1
2	0417	3.6	1.1
M	1027	-0.6	-0.2
	1649	4.1	1.2
	2303	-0.4	-0.1
3	0506	3.6	1.1
Tu	1112	-0.6	-0.2
	1735	4.2	1.3
	2354	-0.4	-0.1
4	0552	3.4	1.0
W	1157	-0.6	-0.2
	1821	4.2	1.3
5	0040	-0.2	-0.1
Th	0635	3.3	1.0
	1239	-0.4	-0.1
	1907	4.1	1.2
6	0129	-0.1	0.0
F	0720	3.1	0.9
	1320	-0.2	-0.1
	1949	3.9	1.2
7	0215	0.1	0.0
Sa	0803	2.8	0.9
	1403	0.0	0.0
	2034	3.7	1.1
8	0303	0.3	0.1
Su	0849	2.6	0.8
	1445	0.2	0.1
	2121	3.5	1.1
9	0352	0.5	0.2
M	0938	2.4	0.7
	1530	0.4	0.1
	2211	3.3	1.0
10	0448	0.6	0.2
Tu	1033	2.3	0.7
	1622	0.6	0.2
	2303	3.2	1.0
11	0543	0.7	0.2
W	1133	2.3	0.7
	1725	0.7	0.2
12	0001	3.1	0.9
Th	0639	0.6	0.2
	1233	2.4	0.7
	1827	0.7	0.2
13	0100	3.1	0.9
F	0729	0.6	0.2
	1330	2.6	0.8
	1929	0.6	0.2
14	0152	3.1	0.9
Sa	0812	0.4	0.1
	1419	2.9	0.9
	2025	0.4	0.1
15	0240	3.2	1.0
Su	0854	0.3	0.1
	1504	3.2	1.0
	2117	0.2	0.1

Day	Time	Height	
	h m	ft	m
16	0323	3.2	1.0
M	0931	0.1	0.0
	1547	3.5	1.1
	2203	0.0	0.0
17	0405	3.2	1.0
Tu	1008	0.0	0.0
	1628	3.8	1.2
	2247	-0.1	0.0
18	0447	3.2	1.0
W	1042	-0.2	-0.1
	1707	4.1	1.2
	2333	-0.1	0.0
19	0523	3.1	0.9
Th	1119	-0.3	-0.1
	1749	4.2	1.3
20	0015	-0.1	0.0
F	0602	3.0	0.9
	1157	-0.3	-0.1
	1831	4.3	1.3
21	0057	0.0	0.0
Sa	0643	3.0	0.9
	1239	-0.3	-0.1
	1915	4.3	1.3
22	0144	0.1	0.0
Su	0728	2.9	0.9
	1324	-0.2	-0.1
	2002	4.1	1.2
23	0233	0.2	0.1
M	0818	2.8	0.9
	1416	-0.1	0.0
	2055	3.9	1.2
24	0326	0.3	0.1
Tu	0915	2.8	0.9
	1516	0.1	0.0
	2154	3.7	1.1
25	0425	0.3	0.1
W	1021	2.9	0.9
	1627	0.2	0.1
	2300	3.5	1.1
26	0525	0.3	0.1
Th	1135	3.0	0.9
	1743	0.3	0.1
27	0007	3.4	1.0
F	0629	0.2	0.1
	1245	3.3	1.0
	1857	0.2	0.1
28	0113	3.4	1.0
Sa	0728	0.1	0.0
	1348	3.6	1.1
	2006	0.1	0.0
29	0214	3.4	1.0
Su	0823	-0.1	0.0
	1446	3.9	1.2
	2105	0.0	0.0
30	0307	3.4	1.0
M	0912	-0.2	-0.1
	1539	4.1	1.2
	2158	-0.2	-0.1
31	0358	3.4	1.0
Tu	1000	-0.3	-0.1
	1624	4.3	1.3
	2247	-0.2	-0.1

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0445	3.4	1.0	16	0416	3.1	0.9
W	1043	-0.3	-0.1	Th	1006	-0.1	0.0
	1709	4.3	1.3		1638	4.6	1.4
	2333	-0.2	-0.1		2309	-0.1	0.0
2	0529	3.3	1.0	17	0458	3.2	1.0
Th	1124	-0.2	-0.1	F	1050	-0.2	-0.1
	1752	4.3	1.3		1723	4.6	1.4
					2354	-0.1	0.0
3	0015	-0.1	0.0	18	0542	3.2	1.0
F	0610	3.2	1.0	Sa	1134	-0.2	-0.1
	1206	-0.1	0.0		1808	4.6	1.4
	1833	4.2	1.3				
4	0059	0.0	0.0	19	0038	-0.1	0.0
Sa	0652	3.1	0.9	Su	0629	3.2	1.0
	1246	0.1	0.0		1223	-0.1	0.0
	1914	4.0	1.2		1854	4.5	1.4
5	0141	0.2	0.1	20	0123	0.0	0.0
Su	0733	2.9	0.9	M	0717	3.2	1.0
	1327	0.3	0.1		1315	0.0	0.0
	1954	3.8	1.2		1944	4.2	1.3
6	0224	0.4	0.1	21	0215	0.1	0.0
M	0818	2.8	0.9	Tu	0812	3.2	1.0
	1409	0.5	0.2		1412	0.2	0.1
	2037	3.5	1.1		2039	3.9	1.2
7	0310	0.5	0.2	22	0308	0.3	0.1
Tu	0905	2.6	0.8	W	0913	3.3	1.0
	1455	0.7	0.2		1516	0.4	0.1
	2124	3.3	1.0		2139	3.6	1.1
8	0359	0.7	0.2	23	0403	0.3	0.1
W	0956	2.6	0.8	Th	1019	3.4	1.0
	1550	0.8	0.2		1630	0.5	0.2
	2219	3.2	1.0		2244	3.4	1.0
9	0451	0.8	0.2	24	0503	0.4	0.1
Th	1055	2.6	0.8	F	1128	3.5	1.1
	1653	0.9	0.3		1745	0.6	0.2
	2316	3.0	0.9		2350	3.2	1.0
10	0543	0.8	0.2	25	0603	0.3	0.1
F	1152	2.8	0.9	Sa	1234	3.7	1.1
	1759	0.8	0.2		1855	0.5	0.2
11	0017	3.0	0.9	26	0056	3.2	1.0
Sa	0633	0.7	0.2	Su	0659	0.3	0.1
	1249	3.0	0.9		1332	4.0	1.2
	1905	0.7	0.2		1958	0.4	0.1
12	0113	3.0	0.9	27	0153	3.2	1.0
Su	0718	0.6	0.2	M	0753	0.2	0.1
	1340	3.4	1.0		1425	4.2	1.3
	2001	0.5	0.2		2054	0.2	0.1
13	0203	3.0	0.9	28	0247	3.2	1.0
M	0803	0.4	0.1	Tu	0842	0.1	0.0
	1427	3.7	1.1		1513	4.4	1.3
	2054	0.3	0.1		2141	0.1	0.0
14	0250	3.0	0.9	29	0336	3.3	1.0
Tu	0844	0.2	0.1	W	0928	0.1	0.0
	1512	4.1	1.2		1557	4.4	1.3
	2140	0.1	0.0		2227	0.1	0.0
15	0333	3.1	0.9	30	0421	3.3	1.0
W	0926	0.1	0.0	Th	1013	0.1	0.0
	1555	4.4	1.3		1640	4.4	1.3
	2226	0.0	0.0		2309	0.1	0.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0504	3.3	1.0	16	0435	3.4	1.0
F	1053	0.2	0.1	Sa	1024	0.0	0.0
	1721	4.4	1.3		1658	5.0	1.5
	2349	0.1	0.0		2333	0.0	0.0
2	0545	3.2	1.0	17	0525	3.5	1.1
Sa	1134	0.3	0.1	Su	1117	0.0	0.0
	1759	4.3	1.3		1748	4.8	1.5
3	0031	0.2	0.1	18	0019	0.0	0.0
Su	0627	3.2	1.0	M	0616	3.6	1.1
	1213	0.5	0.2		1211	0.1	0.0
	1838	4.1	1.2		1836	4.6	1.4
4	0110	0.3	0.1	19	0107	0.0	0.0
M	0707	3.1	0.9	Tu	0709	3.7	1.1
	1256	0.6	0.2		1308	0.3	0.1
	1920	3.9	1.2		1929	4.3	1.3
5	0149	0.5	0.2	20	0157	0.1	0.0
Tu	0751	3.0	0.9	W	0808	3.8	1.2
	1339	0.8	0.2		1410	0.5	0.2
	2000	3.7	1.1		2024	4.0	1.2
6	0231	0.6	0.2	21	0249	0.2	0.1
W	0836	3.0	0.9	Th	0908	3.8	1.2
	1429	0.9	0.3		1518	0.7	0.2
	2045	3.4	1.0		2123	3.7	1.1
7	0314	0.7	0.2	22	0343	0.3	0.1
Th	0924	3.0	0.9	F	1012	3.9	1.2
	1524	1.0	0.3		1628	0.8	0.2
	2135	3.2	1.0		2226	3.4	1.0
8	0358	0.8	0.2	23	0438	0.4	0.1
F	1017	3.1	0.9	Sa	1115	4.0	1.2
	1625	1.1	0.3		1738	0.8	0.2
	2229	3.1	0.9		2329	3.2	1.0
9	0445	0.8	0.2	24	0536	0.5	0.2
Sa	1113	3.3	1.0	Su	1215	4.2	1.3
	1730	1.0	0.3		1845	0.8	0.2
	2325	3.0	0.9				
10	0533	0.8	0.2	25	0032	3.1	0.9
Su	1207	3.6	1.1	M	0629	0.5	0.2
	1833	0.9	0.3		1310	4.3	1.3
					1943	0.7	0.2
11	0024	2.9	0.9	26	0129	3.1	0.9
M	0621	0.7	0.2	Tu	0722	0.5	0.2
	1257	3.9	1.2		1401	4.4	1.3
	1930	0.7	0.2		2035	0.6	0.2
12	0119	2.9	0.9	27	0222	3.2	1.0
Tu	0710	0.5	0.2	W	0811	0.5	0.2
	1348	4.3	1.3		1448	4.5	1.4
	2022	0.5	0.2		2121	0.5	0.2
13	0209	3.0	0.9	28	0310	3.2	1.0
W	0758	0.3	0.1	Th	0856	0.5	0.2
	1435	4.6	1.4		1529	4.5	1.4
	2112	0.3	0.1		2206	0.4	0.1
14	0257	3.1	0.9	29	0357	3.2	1.0
Th	0845	0.2	0.1	F	0941	0.6	0.2
	1524	4.8	1.5		1611	4.5	1.4
	2201	0.1	0.0		2245	0.4	0.1
15	0347	3.2	1.0	30	0439	3.3	1.0
F	0934	0.0	0.0	Sa	1023	0.6	0.2
	1610	4.9	1.5		1650	4.5	1.4
	2247	0.0	0.0		2324	0.4	0.1
				31	0523	3.3	1.0
				Su	1105	0.7	0.2
					1731	4.4	1.3

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0005	0.4	0.1	16	0606	4.1	1.2
M	0601	3.3	1.0	Tu	1203	0.3	0.1
	1147	0.8	0.2		1822	4.7	1.4
	1809	4.2	1.3				
2	0042	0.5	0.2	17	0046	0.1	0.0
Tu	0643	3.3	1.0	W	0701	4.2	1.3
	1230	0.9	0.3		1304	0.5	0.2
	1849	4.0	1.2		1914	4.4	1.3
3	0120	0.6	0.2	18	0136	0.1	0.0
W	0725	3.4	1.0	Th	0757	4.3	1.3
	1315	1.0	0.3		1407	0.7	0.2
	1928	3.8	1.2		2009	4.1	1.2
4	0157	0.7	0.2	19	0226	0.3	0.1
Th	0807	3.4	1.0	F	0855	4.4	1.3
	1404	1.1	0.3		1511	0.9	0.3
	2012	3.6	1.1		2105	3.8	1.2
5	0234	0.8	0.2	20	0319	0.4	0.1
F	0853	3.5	1.1	Sa	0955	4.4	1.3
	1458	1.2	0.4		1616	1.0	0.3
	2055	3.4	1.0		2203	3.5	1.1
6	0311	0.9	0.3	21	0412	0.5	0.2
Sa	0943	3.7	1.1	Su	1054	4.4	1.3
	1556	1.2	0.4		1722	1.0	0.3
	2144	3.2	1.0		2303	3.3	1.0
7	0353	0.8	0.2	22	0504	0.7	0.2
Su	1034	3.9	1.2	M	1150	4.4	1.3
	1659	1.2	0.4		1825	1.1	0.3
	2236	3.0	0.9				
8	0439	0.8	0.2	23	0003	3.2	1.0
M	1126	4.1	1.2	Tu	0558	0.8	0.2
	1759	1.1	0.3		1244	4.5	1.4
	2335	3.0	0.9		1921	1.0	0.3
9	0528	0.7	0.2	24	0100	3.1	0.9
Tu	1218	4.4	1.3	W	0649	0.8	0.2
	1857	1.0	0.3		1332	4.5	1.4
					2012	0.9	0.3
10	0031	3.0	0.9	25	0155	3.1	0.9
W	0622	0.6	0.2	Th	0740	0.9	0.3
	1313	4.7	1.4		1420	4.5	1.4
	1951	0.8	0.2		2059	0.9	0.3
11	0127	3.1	0.9	26	0244	3.2	1.0
Th	0718	0.4	0.1	F	0827	0.9	0.3
	1403	4.9	1.5		1502	4.5	1.4
	2044	0.6	0.2		2141	0.8	0.2
12	0223	3.3	1.0	27	0332	3.3	1.0
F	0813	0.3	0.1	Sa	0912	0.9	0.3
	1456	5.1	1.6		1545	4.5	1.4
	2133	0.4	0.1		2223	0.7	0.2
13	0320	3.5	1.1	28	0416	3.4	1.0
Sa	0910	0.2	0.1	Su	0957	0.9	0.3
	1547	5.1	1.6		1626	4.5	1.4
	2223	0.2	0.1		2300	0.7	0.2
14	0413	3.7	1.1	29	0457	3.4	1.0
Su	1007	0.2	0.1	M	1041	1.0	0.3
	1637	5.1	1.6		1705	4.4	1.3
	2310	0.1	0.0		2337	0.7	0.2
15	0509	3.9	1.2	30	0539	3.5	1.1
M	1106	0.2	0.1	Tu	1126	1.0	0.3
	1730	5.0	1.5		1744	4.3	1.3
	2359	0.1	0.0				

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0014	0.7	0.2	16	0024	0.1	0.0
W	0620	3.6	1.1	Th	0645	4.6	1.4
	1211	1.1	0.3		1254	0.5	0.2
	1822	4.1	1.2		1858	4.4	1.3
2	0048	0.7	0.2	17	0114	0.1	0.0
Th	0659	3.7	1.1	F	0739	4.7	1.4
	1256	1.1	0.3		1352	0.7	0.2
	1901	3.9	1.2		1948	4.1	1.2
3	0121	0.8	0.2	18	0202	0.3	0.1
F	0739	3.9	1.2	Sa	0834	4.7	1.4
	1344	1.2	0.4		1452	0.9	0.3
	1940	3.7	1.1		2042	3.8	1.2
4	0154	0.8	0.2	19	0251	0.4	0.1
Sa	0824	4.0	1.2	Su	0929	4.6	1.4
	1434	1.3	0.4		1552	1.1	0.3
	2019	3.5	1.1		2134	3.5	1.1
5	0229	0.8	0.2	20	0341	0.6	0.2
Su	0906	4.2	1.3	M	1024	4.5	1.4
	1525	1.3	0.4		1653	1.2	0.4
	2105	3.3	1.0		2233	3.3	1.0
6	0310	0.8	0.2	21	0433	0.8	0.2
M	0954	4.3	1.3	Tu	1118	4.4	1.3
	1624	1.3	0.4		1753	1.2	0.4
	2153	3.2	1.0		2330	3.2	1.0
7	0356	0.7	0.2	22	0525	1.0	0.3
Tu	1047	4.5	1.4	W	1211	4.4	1.3
	1721	1.3	0.4		1849	1.2	0.4
	2248	3.1	0.9				
8	0447	0.7	0.2	23	0028	3.1	0.9
W	1143	4.7	1.4	Th	0616	1.1	0.3
	1821	1.2	0.4		1302	4.3	1.3
	2349	3.1	0.9		1944	1.2	0.4
9	0546	0.6	0.2	24	0125	3.1	0.9
Th	1239	4.8	1.5	F	0709	1.1	0.3
	1920	1.0	0.3		1351	4.3	1.3
					2032	1.1	0.3
10	0052	3.3	1.0	25	0218	3.2	1.0
F	0647	0.5	0.2	Sa	0801	1.1	0.3
	1334	5.0	1.5		1438	4.4	1.3
	2013	0.8	0.2		2115	1.0	0.3
11	0156	3.5	1.1	26	0307	3.3	1.0
Sa	0751	0.4	0.1	Su	0851	1.1	0.3
	1432	5.1	1.6		1521	4.4	1.3
	2107	0.6	0.2		2154	0.9	0.3
12	0257	3.7	1.1	27	0349	3.4	1.0
Su	0853	0.4	0.1	M	0939	1.0	0.3
	1527	5.1	1.6		1602	4.4	1.3
	2157	0.3	0.1		2232	0.8	0.2
13	0356	4.0	1.2	28	0433	3.6	1.1
M	0955	0.3	0.1	Tu	1024	1.0	0.3
	1621	5.0	1.5		1643	4.3	1.3
	2248	0.2	0.1		2308	0.8	0.2
14	0455	4.3	1.3	29	0512	3.8	1.2
Tu	1055	0.3	0.1	W	1109	1.0	0.3
	1713	4.9	1.5		1722	4.2	1.3
	2336	0.1	0.0		2341	0.7	0.2
15	0549	4.5	1.4	30	0551	3.9	1.2
W	1155	0.4	0.1	Th	1153	1.0	0.3
	1806	4.7	1.4		1800	4.0	1.2
				31	0013	0.7	0.2
				F	0630	4.1	1.2
					1236	1.0	0.3
					1836	3.9	1.2

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0045	0.7	0.2	16	0133	0.2	0.1
Sa	0709	4.2	1.3	Su	0804	4.7	1.4
	1320	1.1	0.3		1424	0.7	0.2
	1912	3.7	1.1		2013	3.7	1.1
2	0117	0.7	0.2	17	0220	0.4	0.1
Su	0748	4.3	1.3	M	0855	4.5	1.4
	1407	1.2	0.4		1519	1.0	0.3
	1949	3.5	1.1		2105	3.4	1.0
3	0154	0.7	0.2	18	0309	0.6	0.2
M	0831	4.4	1.3	Tu	0946	4.3	1.3
	1455	1.2	0.4		1615	1.1	0.3
	2029	3.3	1.0		2159	3.2	1.0
4	0234	0.6	0.2	19	0359	0.9	0.3
Tu	0919	4.5	1.4	W	1041	4.1	1.2
	1550	1.3	0.4		1714	1.2	0.4
	2117	3.2	1.0		2255	3.1	0.9
5	0321	0.6	0.2	20	0449	1.0	0.3
W	1013	4.6	1.4	Th	1136	4.0	1.2
	1646	1.3	0.4		1812	1.3	0.4
	2214	3.2	1.0		2354	3.0	0.9
6	0418	0.6	0.2	21	0548	1.1	0.3
Th	1110	4.6	1.4	F	1228	4.0	1.2
	1746	1.2	0.4		1908	1.2	0.4
	2318	3.2	1.0				
7	0520	0.6	0.2	22	0054	3.0	0.9
F	1213	4.6	1.4	Sa	0645	1.2	0.4
	1847	1.0	0.3		1322	3.9	1.2
					1956	1.1	0.3
8	0028	3.4	1.0	23	0147	3.1	0.9
Sa	0630	0.6	0.2	Su	0742	1.1	0.3
	1313	4.7	1.4		1411	4.0	1.2
	1944	0.8	0.2		2041	1.0	0.3
9	0137	3.6	1.1	24	0237	3.3	1.0
Su	0739	0.5	0.2	M	0832	1.0	0.3
	1414	4.7	1.4		1457	4.0	1.2
	2041	0.6	0.2		2120	0.9	0.3
10	0241	4.0	1.2	25	0320	3.5	1.1
M	0846	0.4	0.1	Tu	0920	0.9	0.3
	1510	4.7	1.4		1539	4.0	1.2
	2133	0.3	0.1		2157	0.8	0.2
11	0340	4.3	1.3	26	0402	3.7	1.1
Tu	0949	0.3	0.1	W	1008	0.7	0.2
	1606	4.7	1.4		1619	4.0	1.2
	2224	0.1	0.0		2232	0.7	0.2
12	0438	4.6	1.4	27	0441	4.0	1.2
W	1047	0.3	0.1	Th	1050	0.7	0.2
	1658	4.6	1.4		1658	3.9	1.2
	2312	0.0	0.0		2305	0.6	0.2
13	0531	4.8	1.5	28	0520	4.1	1.2
Th	1144	0.3	0.1	F	1134	0.6	0.2
	1748	4.5	1.4		1734	3.8	1.2
	2359	0.0	0.0		2337	0.5	0.2
14	0624	4.8	1.5	29	0558	4.3	1.3
F	1238	0.4	0.1	Sa	1215	0.7	0.2
	1836	4.3	1.3		1807	3.6	1.1
15	0046	0.1	0.0	30	0009	0.5	0.2
Sa	0713	4.8	1.5	Su	0638	4.4	1.3
	1331	0.5	0.2		1257	0.7	0.2
	1925	4.0	1.2		1843	3.5	1.1
				31	0043	0.4	0.1
				M	0717	4.5	1.4
					1341	0.8	0.2
					1921	3.4	1.0

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0123	0.4	0.1	16	0232	0.6	0.2
Tu	0801	4.5	1.4	W	0906	3.9	1.2
	1426	0.9	0.3		1535	0.9	0.3
	2003	3.2	1.0		2124	3.0	0.9
2	0206	0.4	0.1	17	0321	0.8	0.2
W	0850	4.4	1.3	Th	0956	3.7	1.1
	1515	1.0	0.3		1628	1.0	0.3
	2053	3.2	1.0		2220	2.9	0.9
3	0257	0.5	0.2	18	0416	1.0	0.3
Th	0943	4.3	1.3	F	1052	3.5	1.1
	1614	1.0	0.3		1724	1.1	0.3
	2154	3.2	1.0		2319	2.8	0.9
4	0359	0.5	0.2	19	0519	1.0	0.3
F	1046	4.2	1.3	Sa	1151	3.4	1.0
	1715	1.0	0.3		1821	1.1	0.3
	2302	3.3	1.0				
5	0509	0.6	0.2	20	0020	2.9	0.9
Sa	1151	4.1	1.2	Su	0621	1.0	0.3
	1818	0.9	0.3		1247	3.4	1.0
					1913	1.0	0.3
6	0015	3.4	1.0	21	0113	3.1	0.9
Su	0625	0.5	0.2	M	0721	0.9	0.3
	1256	4.1	1.2		1340	3.4	1.0
	1918	0.6	0.2		1956	0.9	0.3
7	0124	3.7	1.1	22	0206	3.3	1.0
M	0737	0.4	0.1	Tu	0814	0.7	0.2
	1358	4.1	1.2		1428	3.5	1.1
	2014	0.4	0.1		2037	0.7	0.2
8	0227	4.1	1.2	23	0248	3.5	1.1
Tu	0843	0.2	0.1	W	0902	0.5	0.2
	1456	4.2	1.3		1510	3.5	1.1
	2108	0.2	0.1		2115	0.6	0.2
9	0325	4.4	1.3	24	0328	3.8	1.2
W	0941	0.1	0.0	Th	0947	0.4	0.1
	1549	4.2	1.3		1551	3.5	1.1
	2157	0.0	0.0		2150	0.4	0.1
10	0417	4.6	1.4	25	0405	4.1	1.2
Th	1035	0.0	0.0	F	1029	0.2	0.1
	1639	4.1	1.2		1630	3.4	1.0
	2247	-0.1	0.0		2226	0.3	0.1
11	0507	4.7	1.4	26	0447	4.3	1.3
F	1127	0.0	0.0	Sa	1112	0.2	0.1
	1728	4.0	1.2		1706	3.4	1.0
	2333	-0.1	0.0		2259	0.2	0.1
12	0557	4.7	1.4	27	0527	4.4	1.3
Sa	1216	0.1	0.0	Su	1152	0.2	0.1
	1814	3.9	1.2		1744	3.3	1.0
					2336	0.1	0.0
13	0016	0.0	0.0	28	0607	4.4	1.3
Su	0643	4.6	1.4	M	1234	0.3	0.1
	1306	0.3	0.1		1822	3.2	1.0
	1900	3.7	1.1				
14	0101	0.1	0.0	29	0016	0.1	0.0
M	0730	4.4	1.3	Tu	0650	4.4	1.3
	1352	0.5	0.2		1316	0.4	0.1
	1946	3.4	1.0		1902	3.2	1.0
15	0146	0.4	0.1	30	0059	0.1	0.0
Tu	0816	4.2	1.3	W	0735	4.2	1.3
	1444	0.7	0.2		1400	0.5	0.2
	2034	3.2	1.0		1948	3.1	0.9

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

SALINA CRUZ, MEXICO, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0149	0.2	0.1	16	0250	0.7	0.2
Th	0824	4.1	1.2	F	0914	3.3	1.0
	1452	0.6	0.2		1542	0.7	0.2
	2042	3.1	0.9		2146	2.7	0.8
2	0248	0.3	0.1	17	0346	0.8	0.2
F	0922	3.8	1.2	Sa	1007	3.1	0.9
	1548	0.6	0.2		1633	0.8	0.2
	2146	3.1	0.9		2242	2.7	0.8
3	0354	0.4	0.1	18	0449	0.8	0.2
Sa	1025	3.6	1.1	Su	1106	2.9	0.9
	1648	0.6	0.2		1727	0.8	0.2
	2254	3.3	1.0		2342	2.8	0.9
4	0510	0.5	0.2	19	0556	0.8	0.2
Su	1132	3.5	1.1	M	1204	2.8	0.9
	1751	0.5	0.2		1817	0.7	0.2
5	0005	3.5	1.1	20	0034	3.0	0.9
M	0625	0.4	0.1	Tu	0657	0.6	0.2
	1239	3.4	1.0		1302	2.8	0.9
	1852	0.3	0.1		1902	0.6	0.2
6	0111	3.8	1.2	21	0123	3.3	1.0
Tu	0734	0.2	0.1	W	0749	0.4	0.1
	1342	3.5	1.1		1350	2.9	0.9
	1948	0.1	0.0		1945	0.5	0.2
7	0211	4.1	1.2	22	0209	3.6	1.1
W	0835	0.0	0.0	Th	0838	0.2	0.1
	1439	3.5	1.1		1435	2.9	0.9
	2041	0.0	0.0		2027	0.3	0.1
8	0305	4.3	1.3	23	0251	3.9	1.2
Th	0931	-0.1	0.0	F	0923	0.0	0.0
	1531	3.6	1.1		1517	2.9	0.9
	2131	-0.2	-0.1		2106	0.1	0.0
9	0355	4.5	1.4	24	0334	4.1	1.2
F	1021	-0.2	-0.1	Sa	1005	-0.1	0.0
	1619	3.6	1.1		1558	3.0	0.9
	2218	-0.2	-0.1		2145	0.0	0.0
10	0442	4.5	1.4	25	0416	4.3	1.3
Sa	1108	-0.3	-0.1	Su	1048	-0.2	-0.1
	1705	3.5	1.1		1639	3.0	0.9
	2303	-0.2	-0.1		2229	-0.2	-0.1
11	0528	4.5	1.4	26	0458	4.4	1.3
Su	1152	-0.2	-0.1	M	1130	-0.2	-0.1
	1751	3.4	1.0		1720	3.0	0.9
	2346	-0.1	0.0		2311	-0.2	-0.1
12	0611	4.3	1.3	27	0540	4.3	1.3
M	1237	-0.1	0.0	Tu	1211	-0.2	-0.1
	1835	3.3	1.0		1803	3.0	0.9
					2356	-0.2	-0.1
13	0032	0.1	0.0	28	0626	4.2	1.3
Tu	0656	4.1	1.2	W	1256	-0.1	0.0
	1319	0.1	0.0		1851	3.1	0.9
	1919	3.1	0.9				
14	0114	0.3	0.1	29	0045	-0.1	0.0
W	0739	3.8	1.2	Th	0714	4.0	1.2
	1407	0.3	0.1		1341	0.0	0.0
	2005	2.9	0.9		1941	3.1	0.9
15	0159	0.5	0.2	30	0141	0.0	0.0
Th	0823	3.5	1.1	F	0807	3.7	1.1
	1453	0.5	0.2		1431	0.1	0.0
	2053	2.8	0.9		2039	3.1	0.9
				31	0245	0.2	0.1
				Sa	0905	3.4	1.0
					1526	0.1	0.0
					2142	3.2	1.0

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0356	0.3	0.1	16	0417	0.6	0.2
Su	1008	3.1	0.9	M	1019	2.5	0.8
	1625	0.2	0.1		1628	0.4	0.1
	2251	3.4	1.0		2257	2.9	0.9
2	0512	0.3	0.1	17	0520	0.6	0.2
M	1115	2.9	0.9	Tu	1115	2.4	0.7
	1725	0.1	0.0		1715	0.4	0.1
	2357	3.6	1.1		2350	3.1	0.9
3	0625	0.2	0.1	18	0623	0.4	0.1
Tu	1223	2.9	0.9	W	1210	2.4	0.7
	1825	0.0	0.0		1802	0.3	0.1
4	0058	3.8	1.2	19	0041	3.4	1.0
W	0729	0.0	0.0	Th	0717	0.2	0.1
	1325	2.9	0.9		1304	2.4	0.7
	1921	-0.1	0.0		1851	0.2	0.1
5	0153	4.0	1.2	20	0129	3.7	1.1
Th	0826	-0.1	0.0	F	0809	0.0	0.0
	1420	2.9	0.9		1355	2.4	0.7
	2014	-0.2	-0.1		1937	0.0	0.0
6	0244	4.1	1.2	21	0215	3.9	1.2
F	0917	-0.3	-0.1	Sa	0854	-0.2	-0.1
	1512	3.0	0.9		1441	2.5	0.8
	2104	-0.2	-0.1		2025	-0.1	0.0
7	0333	4.2	1.3	22	0300	4.1	1.2
Sa	1005	-0.4	-0.1	Su	0939	-0.3	-0.1
	1558	3.0	0.9		1528	2.6	0.8
	2150	-0.3	-0.1		2111	-0.3	-0.1
8	0416	4.2	1.3	23	0346	4.3	1.3
Su	1047	-0.4	-0.1	M	1024	-0.4	-0.1
	1644	3.0	0.9		1613	2.8	0.9
	2235	-0.2	-0.1		2200	-0.4	-0.1
9	0458	4.1	1.2	24	0432	4.3	1.3
M	1129	-0.4	-0.1	Tu	1106	-0.5	-0.2
	1728	3.0	0.9		1701	2.9	0.9
	2319	-0.1	0.0		2252	-0.4	-0.1
10	0540	3.9	1.2	25	0520	4.2	1.3
Tu	1211	-0.3	-0.1	W	1151	-0.5	-0.2
	1811	2.9	0.9		1749	3.1	0.9
					2344	-0.4	-0.1
11	0001	0.0	0.0	26	0609	4.0	1.2
W	0621	3.7	1.1	Th	1235	-0.5	-0.2
	1253	-0.1	0.0		1840	3.2	1.0
	1854	2.9	0.9				
12	0045	0.2	0.1	27	0040	-0.3	-0.1
Th	0704	3.5	1.1	F	0659	3.7	1.1
	1331	0.0	0.0		1323	-0.4	-0.1
	1938	2.8	0.9		1936	3.3	1.0
13	0130	0.4	0.1	28	0139	-0.1	0.0
F	0746	3.2	1.0	Sa	0752	3.4	1.0
	1413	0.2	0.1		1413	-0.4	-0.1
	2025	2.7	0.8		2034	3.3	1.0
14	0220	0.5	0.2	29	0245	0.0	0.0
Sa	0832	3.0	0.9	Su	0850	3.1	0.9
	1455	0.3	0.1		1505	-0.3	-0.1
	2111	2.7	0.8		2134	3.4	1.0
15	0316	0.6	0.2	30	0354	0.1	0.0
Su	0922	2.7	0.8	M	0951	2.8	0.9
	1542	0.4	0.1		1600	-0.2	-0.1
	2204	2.8	0.9		2239	3.5	1.1

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0505	0.2	0.1	16	0442	0.5	0.2
Tu	1055	2.6	0.8	W	1020	2.2	0.7
	1658	-0.1	0.0		1615	0.2	0.1
	2341	3.6	1.1		2303	3.3	1.0
2	0614	0.1	0.0	17	0542	0.4	0.1
W	1200	2.5	0.8	Th	1116	2.1	0.6
	1756	-0.1	0.0		1706	0.1	0.0
					2355	3.5	1.1
3	0039	3.8	1.2	18	0639	0.3	0.1
Th	0718	0.0	0.0	F	1213	2.1	0.6
	1301	2.5	0.8		1757	0.0	0.0
	1851	-0.1	0.0				
4	0132	3.9	1.2	19	0049	3.7	1.1
F	0811	-0.1	0.0	Sa	0732	0.1	0.0
	1358	2.5	0.8		1309	2.2	0.7
	1947	-0.1	0.0		1854	-0.1	0.0
5	0222	3.9	1.2	20	0140	3.9	1.2
Sa	0900	-0.2	-0.1	Su	0822	-0.1	0.0
	1451	2.6	0.8		1403	2.4	0.7
	2037	-0.1	0.0		1950	-0.3	-0.1
6	0308	3.9	1.2	21	0232	4.1	1.2
Su	0943	-0.3	-0.1	M	0910	-0.3	-0.1
	1538	2.6	0.8		1459	2.6	0.8
	2124	-0.1	0.0		2045	-0.4	-0.1
7	0352	3.9	1.2	22	0321	4.2	1.3
M	1027	-0.4	-0.1	Tu	0959	-0.5	-0.2
	1624	2.7	0.8		1551	2.8	0.9
	2209	-0.1	0.0		2141	-0.5	-0.2
8	0433	3.8	1.2	23	0413	4.2	1.3
Tu	1107	-0.4	-0.1	W	1045	-0.6	-0.2
	1706	2.8	0.9		1644	3.1	0.9
	2255	0.0	0.0		2240	-0.5	-0.2
9	0514	3.7	1.1	24	0503	4.1	1.2
W	1146	-0.3	-0.1	Th	1130	-0.7	-0.2
	1750	2.8	0.9		1736	3.3	1.0
	2337	0.1	0.0		2337	-0.5	-0.2
10	0553	3.5	1.1	25	0554	3.9	1.2
Th	1224	-0.3	-0.1	F	1216	-0.8	-0.2
	1830	2.8	0.9		1831	3.5	1.1
11	0021	0.2	0.1	26	0035	-0.4	-0.1
F	0635	3.3	1.0	Sa	0645	3.6	1.1
	1301	-0.2	-0.1		1304	-0.7	-0.2
	1912	2.8	0.9		1924	3.6	1.1
12	0107	0.3	0.1	27	0136	-0.2	-0.1
Sa	0715	3.1	0.9	Su	0736	3.3	1.0
	1338	-0.1	0.0		1352	-0.6	-0.2
	1954	2.8	0.9		2021	3.7	1.1
13	0154	0.4	0.1	28	0238	-0.1	0.0
Su	0757	2.8	0.9	M	0831	3.0	0.9
	1416	0.0	0.0		1444	-0.5	-0.2
	2039	2.9	0.9		2119	3.7	1.1
14	0245	0.5	0.2	29	0343	0.0	0.0
M	0841	2.6	0.8	Tu	0930	2.7	0.8
	1453	0.1	0.0		1535	-0.4	-0.1
	2122	3.0	0.9		2217	3.7	1.1
15	0342	0.5	0.2	30	0449	0.1	0.0
Tu	0930	2.4	0.7	W	1030	2.5	0.8
	1532	0.2	0.1		1631	-0.2	-0.1
	2212	3.1	0.9		2316	3.7	1.1
				31	0554	0.1	0.0
				Th	1135	2.3	0.7
					1727	-0.1	0.0

Time meridian 90° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.

GUAYMAS, MEXICO, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0152	2.3	0.7	16	0109	1.8	0.5
Th	0400	2.2	0.7	F	0341	1.7	0.5
	0818	2.6	0.8		0833	2.2	0.7
	1733	-1.9	-0.6		1704	-1.3	-0.4
2	0242	2.2	0.7	17	0134	1.7	0.5
F	0442	2.1	0.6	Sa	0423	1.6	0.5
	0833	2.4	0.7		0858	2.1	0.6
	1812	-1.4	-0.4		1729	-1.1	-0.3
3	0317	2.0	0.6	18	0158	1.7	0.5
Sa	0556	1.9	0.6	Su	0509	1.4	0.4
	0821	2.0	0.6		0927	1.9	0.6
	1841	-0.9	-0.3		1751	-0.8	-0.2
4	0346	1.9	0.6	19	0211	1.6	0.5
Su	1100	1.4*	0.4*	M	0608	1.3	0.4
	1902	-0.3	-0.1		1000	1.6	0.5
					1810	-0.4	-0.1
5	0407	1.8	0.5	20	0218	1.6	0.5
M	1857	0.3	0.1	Tu	0723	1.0	0.3
					1027	1.2	0.4
					1824	0.1	0.0
6	0422	1.7	0.5	21	0205	1.6	0.5
Tu	1402	0.2	0.1	W	1539	0.5	0.2
7	0435	1.7	0.5	22	0138	1.7	0.5
W	1358	-0.2	-0.1	Th	1218	0.1	0.0
	2200	1.4*	0.4*				
8	0436	1.8	0.5	23	0125	1.9	0.6
Th	1413	-0.6	-0.2	F	1242	-0.5	-0.2
9	0133	1.9	0.6	24	0124	2.0	0.6
F	1427	-0.9	-0.3	Sa	1317	-1.1	-0.3
10	0155	2.0	0.6	25	0126	2.2	0.7
Sa	0800	1.6*	0.5*	Su	1359	-1.6	-0.5
	1443	-1.1	-0.3		2309	2.3	0.7
11	0319	2.1	0.6	26	0800	1.9*	0.6*
Su	1501	-1.3	-0.4	M	1442	-2.0	-0.6
	2200	1.7*	0.5*		2321	2.4	0.7
12	0603	2.2	0.7	27	0250	2.2	0.7
M	1525	-1.4	-0.4	Tu	0644	2.4	0.7
	2300	1.8*	0.5*		1522	-2.2	-0.7
					2342	2.4	0.7
13	0656	2.2	0.7	28	0313	2.1	0.6
Tu	1549	-1.4	-0.4	W	0743	2.5	0.8
					1600	-2.2	-0.7
14	0029	1.9	0.6	29	0010	2.3	0.7
W	0218	1.8	0.5	Th	0345	1.9	0.6
	0733	2.3	0.7		0835	2.4	0.7
	1613	-1.5	-0.5		1637	-1.9	-0.6
15	0051	1.8	0.5	30	0039	2.1	0.6
Th	0259	1.7	0.5	F	0421	1.6	0.5
	0805	2.3	0.7		0921	2.3	0.7
	1639	-1.4	-0.4		1709	-1.5	-0.5
				31	0059	1.9	0.6
				Sa	0503	1.4	0.4
					0959	2.0	0.6
					1734	-1.0	-0.3

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0119	1.8	0.5	16	0007	1.7	0.5
Su	0549	1.1	0.3	M	0509	0.7	0.2
	1041	1.5	0.5		1023	1.6	0.5
	1751	-0.4	-0.1		1713	-0.3	-0.1
2	0132	1.7	0.5	17	0002	1.7	0.5
M	0645	0.8	0.2	Tu	0556	0.5	0.2
	1100	1.1	0.3		1103	1.3	0.4
	1746	0.2	0.1		1724	0.2	0.1
					2345	1.8	0.5
3	0132	1.6	0.5	18	0645	0.2	0.1
Tu	1636	0.5	0.2	W	1207	0.9	0.3
					1708	0.6	0.2
					2335	1.9	0.6
4	0025	1.7	0.5	19	0757	0.0	0.0
W	1306	0.1	0.0	Th	2326	2.1	0.6
	2338	1.9	0.6				
5	1327	-0.3	-0.1	20	0954	-0.3	-0.1
Th	2338	2.1	0.6	F	2327	2.3	0.7
6	1349	-0.6	-0.2	21	1204	-0.7	-0.2
F	2346	2.2	0.7	Sa	2317	2.4	0.7
7	1411	-0.8	-0.2	22	1307	-1.2	-0.4
Sa				Su	2245	2.5	0.8
8	0001	2.2	0.7	23	1351	-1.5	-0.5
Su	1435	-1.0	-0.3	M	2226	2.5	0.8
	2356	2.1	0.6				
9	0800	1.6*	0.5*	24	0600	2.0*	0.6*
M	1453	-1.1	-0.3	Tu	1433	-1.7	-0.5
	2327	2.0	0.6		2236	2.4	0.7
10	0401	1.8	0.5	25	0325	1.9	0.6
Tu	0651	1.9	0.6	W	0723	2.2	0.7
	1513	-1.2	-0.4		1507	-1.7	-0.5
	2314	1.9	0.6		2250	2.3	0.7
11	0248	1.7	0.5	26	0330	1.6	0.5
W	0736	2.1	0.6	Th	0818	2.3	0.7
	1533	-1.3	-0.4		1541	-1.5	-0.5
	2321	1.9	0.6		2305	2.2	0.7
12	0258	1.5	0.5	27	0345	1.2	0.4
Th	0815	2.1	0.6	F	0911	2.2	0.7
	1553	-1.3	-0.4		1607	-1.2	-0.4
	2335	1.9	0.6		2317	2.1	0.6
13	0327	1.3	0.4	28	0417	0.8	0.2
F	0847	2.1	0.6	Sa	0959	2.0	0.6
	1615	-1.2	-0.4		1632	-0.7	-0.2
	2346	1.8	0.5		2330	2.0	0.6
14	0359	1.1	0.3				
Sa	0915	2.1	0.6				
	1636	-1.0	-0.3				
15	0001	1.8	0.5				
Su	0431	0.9	0.3				
	0947	1.9	0.6				
	1655	-0.7	-0.2				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0449	0.5	0.2	16	0423	0.1	0.0
Su	1045	1.8	0.5	M	1033	1.8	0.5
	1647	-0.1	0.0		1618	0.2	0.1
	2335	1.9	0.6		2231	2.0	0.6
2	0524	0.2	0.1	17	0455	-0.1	0.0
M	1138	1.4	0.4	Tu	1127	1.6	0.5
	1655	0.4	0.1		1633	0.6	0.2
	2325	1.9	0.6		2224	2.1	0.6
3	0606	0.1	0.0	18	0537	-0.3	-0.1
Tu	1251	1.0	0.3	W	1257	1.3	0.4
	1636	0.8	0.2		1631	1.1	0.3
	2251	2.0	0.6		2212	2.3	0.7
4	0647	0.0	0.0	19	0625	-0.4	-0.1
W	2224	2.1	0.6	Th	2209	2.5	0.8
5	0744	0.0	0.0	20	0731	-0.5	-0.2
Th	2225	2.3	0.7	F	2208	2.6	0.8
6	1222	-0.1	0.0	21	0916	-0.5	-0.2
F	2233	2.4	0.7	Sa	2206	2.7	0.8
7	1311	-0.3	-0.1	22	1136	-0.7	-0.2
Sa	2243	2.4	0.7	Su	2154	2.7	0.8
8	1343	-0.5	-0.2	23	1245	-1.0	-0.3
Su	2245	2.3	0.7	M	2135	2.7	0.8
9	1404	-0.7	-0.2	24	1330	-1.1	-0.3
M	2229	2.2	0.7	Tu	2132	2.6	0.8
10	1424	-0.8	-0.2	25	0342	1.6	0.5
Tu	2209	2.1	0.6	W	0642	1.8	0.5
					1409	-1.0	-0.3
					2137	2.4	0.7
11	0342	1.6	0.5	26	0316	1.3	0.4
W	0709	1.8	0.5	Th	0748	2.0	0.6
	1439	-0.9	-0.3		1441	-0.8	-0.2
	2210	2.0	0.6		2145	2.3	0.7
12	0253	1.4	0.4	27	0317	0.9	0.3
Th	0751	2.0	0.6	F	0840	2.0	0.6
	1457	-0.8	-0.2		1506	-0.5	-0.2
	2214	2.0	0.6		2154	2.3	0.7
13	0301	1.1	0.3	28	0336	0.4	0.1
F	0833	2.0	0.6	Sa	0933	2.0	0.6
	1519	-0.7	-0.2		1524	0.0	0.0
	2223	2.0	0.6		2202	2.2	0.7
14	0319	0.8	0.2	29	0400	0.1	0.0
Sa	0909	2.0	0.6	Su	1024	1.9	0.6
	1538	-0.5	-0.2		1543	0.4	0.1
	2230	2.0	0.6		2205	2.2	0.7
15	0348	0.5	0.2	30	0429	-0.2	-0.1
Su	0947	2.0	0.6	M	1119	1.7	0.5
	1600	-0.2	-0.1		1554	0.8	0.2
	2237	2.0	0.6		2157	2.2	0.7
				31	0501	-0.4	-0.1
				Tu	1223	1.5	0.5
					1552	1.2	0.4
					2137	2.3	0.7

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

GUAYMAS, MEXICO, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0530	-0.5	-0.2	16	0525	-0.9	-0.3
W	2121	2.5	0.8	Th	2106	2.8	0.9
2	0609	-0.4	-0.1	17	0617	-0.9	-0.3
Th	2121	2.6	0.8	F	2103	3.0	0.9
3	0651	-0.3	-0.1	18	0723	-0.8	-0.2
F	2130	2.7	0.8	Sa	2106	3.0	0.9
4	0757	-0.1	0.0	19	0857	-0.6	-0.2
Sa	2142	2.6	0.8	Su	2056	3.0	0.9
5	1133	0.0	0.0	20	1046	-0.6	-0.2
Su	2148	2.6	0.8	M	2036	2.9	0.9
6	1235	-0.2	-0.1	21	1202	-0.5	-0.2
M	2137	2.4	0.7	Tu	2026	2.7	0.8
7	1306	-0.2	-0.1	22	1248	-0.3	-0.1
Tu	2106	2.3	0.7	W	2027	2.6	0.8
8	1325	-0.3	-0.1	23	0310	1.2	0.4
W	2057	2.2	0.7	Th	0711	1.6	0.5
					1327	0.0	0.0
					2031	2.5	0.8
9	0313	1.3	0.4	24	0301	0.7	0.2
Th	0709	1.7	0.5	F	0811	1.8	0.5
	1347	-0.2	-0.1		1351	0.4	0.1
	2057	2.2	0.7		2035	2.5	0.8
10	0237	1.0	0.3	25	0306	0.3	0.1
F	0756	1.8	0.5	Sa	0908	1.9	0.6
	1405	-0.1	0.0		1414	0.8	0.2
	2103	2.2	0.7		2041	2.5	0.8
11	0244	0.6	0.2	26	0321	-0.1	0.0
Sa	0839	2.0	0.6	Su	1003	1.9	0.6
	1430	0.1	0.0		1429	1.1	0.3
	2112	2.3	0.7		2044	2.6	0.8
12	0303	0.2	0.1	27	0345	-0.4	-0.1
Su	0927	2.0	0.6	M	1059	2.0	0.6
	1455	0.4	0.1		1440	1.5	0.5
	2113	2.3	0.7		2039	2.6	0.8
13	0335	-0.2	-0.1	28	0411	-0.6	-0.2
M	1021	2.0	0.6	Tu	1201	1.9	0.6
	1517	0.8	0.2		1448	1.7	0.5
	2116	2.4	0.7		2031	2.7	0.8
14	0407	-0.6	-0.2	29	0439	-0.7	-0.2
Tu	1122	2.0	0.6	W	2025	2.8	0.9
	1539	1.2	0.4				
	2111	2.5	0.8				
15	0445	-0.8	-0.2	30	0511	-0.7	-0.2
W	1243	1.9	0.6	Th	2026	2.9	0.9
	1550	1.6	0.5				
	2105	2.6	0.8				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0546	-0.5	-0.2	16	0619	-1.0	-0.3
F	2037	2.9	0.9	Sa	2020	3.3	1.0
2	0628	-0.3	-0.1	17	0722	-0.8	-0.2
Sa	2049	2.9	0.9	Su	2007	3.2	1.0
3	0721	-0.1	0.0	18	0828	-0.5	-0.2
Su	2100	2.9	0.9	M	1933	3.1	0.9
4	0838	0.0	0.0	19	0947	-0.1	0.0
M	2054	2.7	0.8	Tu	1912	2.9	0.9
5	1007	0.2	0.1	20	1053	0.3	0.1
Tu	2013	2.6	0.8	W	1906	2.8	0.9
6	1106	0.3	0.1	21	0256	1.2	0.4
W	1946	2.5	0.8	Th	0611	1.5	0.5
					1139	0.7	0.2
					1914	2.8	0.9
7	1149	0.4	0.1	22	0241	0.8	0.2
Th	1944	2.5	0.8	F	0748	1.6	0.5
					1218	1.2	0.4
					1917	2.8	0.9
8	0239	1.2	0.4	23	0242	0.4	0.1
F	0659	1.6	0.5	Sa	0857	1.9	0.6
	1227	0.6	0.2		1235	1.6	0.5
	1945	2.5	0.8		1922	2.8	0.9
9	0212	0.8	0.2	24	0253	0.0	0.0
Sa	0802	1.8	0.5	Su	1003	2.1	0.6
	1303	0.8	0.2		1250	1.9	0.6
	1951	2.6	0.8		1926	2.9	0.9
10	0223	0.2	0.1	25	0311	-0.3	-0.1
Su	0859	2.0	0.6	M	1106	2.2	0.7
	1335	1.1	0.3		1309	2.1	0.6
	1956	2.7	0.8		1927	3.0	0.9
11	0248	-0.3	-0.1	26	0333	-0.6	-0.2
M	0958	2.2	0.7	Tu	1921	3.1	0.9
	1407	1.5	0.5				
	2000	2.8	0.9				
12	0321	-0.7	-0.2	27	0358	-0.7	-0.2
Tu	1100	2.3	0.7	W	1927	3.2	1.0
	1438	1.9	0.6				
	2001	2.9	0.9				
13	0359	-1.0	-0.3	28	0427	-0.7	-0.2
W	1220	2.4	0.7	Th	1936	3.2	1.0
	1500	2.2	0.7				
	2005	3.1	0.9				
14	0441	-1.2	-0.4	29	0501	-0.6	-0.2
Th	2010	3.2	1.0	F	1951	3.3	1.0
15	0530	-1.2	-0.4	30	0535	-0.4	-0.1
F	2016	3.3	1.0	Sa	2012	3.2	1.0
				31	0614	-0.3	-0.1
				Su	2028	3.2	1.0

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0653	-0.1	0.0	16	0749	0.0	0.0
M	2042	3.0	0.9	Tu	1731	3.1	0.9
2	0739	0.2	0.1	17	0827	0.6	0.2
Tu	1949	2.8	0.9	W	1739	3.0	0.9
3	0820	0.4	0.1	18	0849	1.2	0.4
W	1829	2.7	0.8	Th	1748	2.9	0.9
4	0909	0.7	0.2	19	0213	1.1	0.3
Th	1821	2.7	0.8	F	1752	2.9	0.9
5	1001	1.0	0.3	20	0217	0.7	0.2
F	1825	2.7	0.8	Sa	1757	3.0	0.9
6	0154	1.1	0.3	21	0227	0.3	0.1
Sa	0719	1.7	0.5	Su	1200	2.6*	0.8*
	1054	1.4	0.4		1801	3.1	0.9
	1824	2.8	0.9				
7	0142	0.6	0.2	22	0245	0.0	0.0
Su	0834	2.0	0.6	M	1100	2.7*	0.8*
	1142	1.8	0.5		1806	3.2	1.0
	1832	2.9	0.9				
8	0200	0.1	0.0	23	0303	-0.2	-0.1
M	0940	2.4	0.7	Tu	1818	3.4	1.0
	1235	2.2	0.7				
	1840	3.1	0.9				
9	0233	-0.5	-0.2	24	0330	-0.3	-0.1
Tu	1043	2.7	0.8	W	1200	2.9*	0.9*
	1320	2.5	0.8		1836	3.4	1.0
	1851	3.3	1.0				
10	0311	-0.9	-0.3	25	0352	-0.4	-0.1
W	1153	2.9	0.9	Th	1901	3.5	1.1
	1402	2.8	0.9				
	1913	3.5	1.1				
11	0353	-1.1	-0.3	26	0422	-0.4	-0.1
Th	1300	3.1*	0.9*	F	1930	3.5	1.1
	1930	3.6	1.1				
12	0442	-1.2	-0.4	27	0453	-0.3	-0.1
F	1300	3.1*	0.9*	Sa	1955	3.5	1.1
	1951	3.6	1.1				
13	0530	-1.1	-0.3	28	0525	-0.2	-0.1
Sa	1400	3.1*	0.9*	Su	2021	3.4	1.0
	2006	3.6	1.1				
14	0617	-0.9	-0.3	29	0551	0.0	0.0
Su	1400	2.9*	0.9*	M	2045	3.3	1.0
	2003	3.4	1.0				
15	0705	-0.5	-0.2	30	0619	0.2	0.1
M	1751	3.2	1.0	Tu	1400	2.6*	0.8*
					2104	3.1	0.9

Time meridian 105° W. 0000 is midnight. 1200 is noon.
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GUAYMAS, MEXICO, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0646	0.5	0.2	16	0657	1.4	0.4
W	1627	2.8	0.9	Th	1545	3.0	0.9
2	0000	2.5*	0.8*	17	0130	1.6	0.5
Th	0714	0.9	0.3	F	1551	3.0	0.9
	1629	2.8	0.9				
	2300	2.3*	0.7*				
3	0736	1.3	0.4	18	0131	1.2	0.4
F	1631	2.8	0.9	Sa	0900	2.5*	0.8*
					1542	3.0	0.9
4	0256	1.6	0.5	19	0153	0.8	0.2
Sa	1629	2.9	0.9	Su	1303	3.2	1.0
5	0109	1.2	0.4	20	0218	0.5	0.2
Su	1630	3.1	0.9	M	1324	3.4	1.0
6	0114	0.6	0.2	21	0236	0.3	0.1
M	1651	3.3	1.0	Tu	1407	3.4	1.0
7	0149	0.1	0.0	22	0300	0.1	0.0
Tu	1000	3.0*	0.9*	W	1000	3.0*	0.9*
	1727	3.5	1.1		1743	3.4	1.0
8	0226	-0.4	-0.1	23	0323	0.0	0.0
W	1000	3.2*	1.0*	Th	1100	3.1*	0.9*
	1806	3.7	1.1		1851	3.5	1.1
9	0309	-0.8	-0.2	24	0346	0.0	0.0
Th	1201	3.5	1.1	F	1200	3.2*	1.0*
	1400	3.4	1.0		1938	3.6	1.1
	1858	3.8	1.2				
10	0352	-1.0	-0.3	25	0411	0.0	0.0
F	1242	3.5	1.1	Sa	1234	3.1	0.9
	1457	3.4	1.0		1449	3.0	0.9
	1945	3.9	1.2		2015	3.6	1.1
11	0437	-1.0	-0.3	26	0436	0.0	0.0
Sa	1325	3.5	1.1	Su	1252	3.1	0.9
	1543	3.4	1.0		1528	2.9	0.9
	2026	3.8	1.2		2041	3.6	1.1
12	0517	-0.8	-0.2	27	0455	0.2	0.1
Su	1400	3.4	1.0	M	1314	3.0	0.9
	1636	3.3	1.0		1607	2.8	0.9
	2104	3.6	1.1		2103	3.4	1.0
13	0559	-0.3	-0.1	28	0516	0.4	0.1
M	1439	3.2	1.0	Tu	1332	3.0	0.9
	1742	3.1	0.9		1653	2.7	0.8
	2129	3.3	1.0		2127	3.2	1.0
14	0631	0.2	0.1	29	0541	0.7	0.2
Tu	1505	3.1	0.9	W	1345	2.9	0.9
					1745	2.5	0.8
					2200	3.0	0.9
15	0000	2.7*	0.8*	30	0559	1.0	0.3
W	0652	0.8	0.2	Th	1340	2.9	0.9
	1528	3.0	0.9		1844	2.3	0.7
					2236	2.6	0.8
				31	0611	1.5	0.5
				F	1323	2.9	0.9
					2003	2.0	0.6
					2318	2.2	0.7

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0556	1.9	0.6	16	0043	1.2	0.4
Sa	1300	3.1	0.9	Su	1108	3.5	1.1
	2203	1.7	0.5				
2	1300	3.2	1.0	17	0122	0.9	0.3
Su	2357	1.1	0.3	M	1119	3.6	1.1
3	1311	3.4	1.0	18	0157	0.7	0.2
M				Tu	1131	3.6	1.1
4	0050	0.6	0.2	19	0222	0.5	0.2
Tu	1334	3.5	1.1	W	1135	3.5	1.1
					1900	3.1*	0.9*
5	0136	0.1	0.0	20	0245	0.4	0.1
W	0900	3.4*	1.0*	Th	1109	3.4	1.0
	1540	3.6	1.1		1548	3.2	1.0
					1851	3.3	1.0
6	0221	-0.3	-0.1	21	0305	0.3	0.1
Th	1100	3.7	1.1	F	1055	3.3	1.0
	1407	3.5	1.1		1433	3.0	0.9
	1824	3.7	1.1		1940	3.4	1.0
7	0303	-0.6	-0.2	22	0321	0.3	0.1
F	1118	3.7	1.1	Sa	1100	3.2	1.0
	1442	3.4	1.0		1441	2.8	0.9
	1933	3.9	1.2		2015	3.5	1.1
8	0341	-0.6	-0.2	23	0343	0.3	0.1
Sa	1140	3.6	1.1	Su	1111	3.1	0.9
	1517	3.2	1.0		1505	2.6	0.8
	2029	3.9	1.2		2047	3.5	1.1
9	0420	-0.5	-0.2	24	0401	0.4	0.1
Su	1209	3.5	1.1	M	1122	3.1	0.9
	1557	2.9	0.9		1540	2.4	0.7
	2118	3.8	1.2		2114	3.4	1.0
10	0452	-0.1	0.0	25	0420	0.6	0.2
M	1230	3.3	1.0	Tu	1131	3.0	0.9
	1641	2.6	0.8		1612	2.1	0.6
	2207	3.5	1.1		2148	3.3	1.0
11	0524	0.5	0.2	26	0441	0.9	0.3
Tu	1249	3.2	1.0	W	1136	3.0	0.9
	1729	2.3	0.7		1644	1.9	0.6
	2257	3.1	0.9		2220	3.0	0.9
12	0542	1.1	0.3	27	0459	1.3	0.4
W	1302	3.1	0.9	Th	1127	3.0	0.9
	1821	2.1	0.6		1725	1.7	0.5
	2354	2.6	0.8		2259	2.7	0.8
13	0550	1.7	0.5	28	0507	1.7	0.5
Th	1300	3.0	0.9	F	1111	3.1	0.9
	1924	1.9	0.6		1811	1.5	0.5
					2356	2.4	0.7
14	0230	2.2	0.7	29	0505	2.1	0.6
F	0514	2.1	0.6	Sa	1101	3.2	1.0
	1212	3.1	0.9		1910	1.4	0.4
	2336	1.6	0.5				
15	1113	3.3	1.0	30	1101	3.4	1.0
Sa				Su	2043	1.2	0.4
				31	1106	3.6	1.1
				M	2309	0.9	0.3

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	1103	3.6	1.1	16	0119	0.7	0.2
Tu				W	1011	3.5	1.1
2	0033	0.4	0.1	17	0149	0.6	0.2
W	1024	3.7	1.1	Th	0955	3.3	1.0
					1605	2.6	0.8
					1821	2.7	0.8
3	0122	0.1	0.0	18	0211	0.5	0.2
Th	1000	3.7	1.1	F	0942	3.2	1.0
	1800	3.2*	1.0*		1519	2.6	0.8
					1906	2.9	0.9
4	0204	-0.2	-0.1	19	0226	0.5	0.2
F	1005	3.6	1.1	Sa	0941	3.1	0.9
	1452	3.1	0.9		1443	2.4	0.7
	1903	3.5	1.1		1948	3.0	0.9
5	0243	-0.2	-0.1	20	0241	0.5	0.2
Sa	1016	3.5	1.1	Su	0947	3.0	0.9
	1500	2.8	0.9		1445	2.1	0.6
	2002	3.6	1.1		2027	3.1	0.9
6	0318	-0.1	0.0	21	0258	0.6	0.2
Su	1034	3.4	1.0	M	0955	3.0	0.9
	1521	2.4	0.7		1503	1.7	0.5
	2055	3.6	1.1		2103	3.1	0.9
7	0350	0.2	0.1	22	0316	0.8	0.2
M	1049	3.3	1.0	Tu	1000	3.0	0.9
	1553	1.9	0.6		1528	1.4	0.4
	2146	3.4	1.0		2141	3.0	0.9
8	0415	0.7	0.2	23	0336	1.1	0.3
Tu	1101	3.2	1.0	W	1003	3.0	0.9
	1625	1.6	0.5		1600	1.1	0.3
	2242	3.2	1.0		2223	2.9	0.9
9	0437	1.3	0.4	24	0356	1.4	0.4
W	1106	3.1	0.9	Th	0959	3.0	0.9
	1701	1.3	0.4		1632	0.8	0.2
	2343	2.8	0.9		2314	2.7	0.8
10	0445	1.8	0.5	25	0413	1.8	0.5
Th	1053	3.1	0.9	F	0947	3.1	0.9
	1743	1.1	0.3		1707	0.6	0.2
11	0106	2.5	0.8	26	0030	2.5	0.8
F	0430	2.2	0.7	Sa	0411	2.2	0.7
	1024	3.2	1.0		0941	3.3	1.0
	1825	1.1	0.3		1749	0.5	0.2
12	0952	3.4	1.0	27	0942	3.4	1.0
Sa	1924	1.1	0.3	Su	1847	0.5	0.2
13	0951	3.5	1.1	28	0945	3.5	1.1
Su	2312	1.1	0.3	M	2017	0.5	0.2
14	0958	3.6	1.1	29	0943	3.6	1.1
M				Tu	2228	0.4	0.1
15	0040	0.9	0.3	30	0924	3.6	1.1
Tu	1007	3.6	1.1	W			

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

GUAYMAS, MEXICO, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0005	0.2	0.1
Th	0901	3.5	1.1
2	0057	0.0	0.0
F	0858	3.4	1.0
	1512	2.5	0.8
	1819	2.7	0.8
3	0139	0.0	0.0
Sa	0904	3.3	1.0
	1449	2.1	0.6
	1930	2.8	0.9
4	0214	0.2	0.1
Su	0914	3.2	1.0
	1450	1.6	0.5
	2027	3.0	0.9
5	0243	0.5	0.2
M	0923	3.1	0.9
	1513	1.1	0.3
	2119	2.9	0.9
6	0304	1.0	0.3
Tu	0931	3.1	0.9
	1538	0.7	0.2
	2214	2.8	0.9
7	0326	1.4	0.4
W	0933	3.0	0.9
	1607	0.4	0.1
	2313	2.7	0.8
8	0338	1.9	0.6
Th	0927	3.1	0.9
	1641	0.2	0.1
9	0025	2.5	0.8
F	0339	2.2	0.7
	0903	3.2	1.0
	1713	0.1	0.0
10	0853	3.3	1.0
Sa	1749	0.2	0.1
11	0850	3.4	1.0
Su	1833	0.4	0.1
12	0858	3.4	1.0
M	1937	0.6	0.2
13	0909	3.4	1.0
Tu	2259	0.7	0.2
14	0912	3.2	1.0
W			
15	0011	0.6	0.2
Th	0857	3.1	0.9

Day	Time	Height	
	h m	ft	m
16	0050	0.5	0.2
F	0835	2.9	0.9
	1539	1.9	0.6
	1813	2.0	0.6
17	0109	0.5	0.2
Sa	0830	2.8	0.9
	1500	1.8	0.5
	1906	2.2	0.7
18	0127	0.6	0.2
Su	0830	2.8	0.9
	1427	1.5	0.5
	1953	2.4	0.7
19	0145	0.7	0.2
M	0834	2.8	0.9
	1428	1.0	0.3
	2035	2.5	0.8
20	0207	0.9	0.3
Tu	0841	2.8	0.9
	1446	0.6	0.2
	2120	2.5	0.8
21	0232	1.2	0.4
W	0841	2.8	0.9
	1512	0.2	0.1
	2209	2.5	0.8
22	0254	1.5	0.5
Th	0839	2.9	0.9
	1544	-0.1	0.0
	2304	2.5	0.8
23	0312	1.8	0.5
F	0837	3.0	0.9
	1620	-0.4	-0.1
24	0020	2.4	0.7
Sa	0327	2.2	0.7
	0837	3.1	0.9
	1658	-0.5	-0.2
25	0841	3.3	1.0
Su	1743	-0.5	-0.2
26	0843	3.4	1.0
M	1843	-0.4	-0.1
27	0845	3.4	1.0
Tu	2002	-0.2	-0.1
28	0833	3.3	1.0
W	2147	-0.1	0.0
29	0805	3.2	1.0
Th	2315	0.0	0.0
30	0749	3.1	0.9
F			
31	0018	0.1	0.0
Sa	0756	2.9	0.9
	1446	1.4	0.4
	1851	1.9	0.6

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0057	0.4	0.1
Su	0800	2.8	0.9
	1434	0.9	0.3
	1957	2.1	0.6
2	0129	0.8	0.2
M	0806	2.8	0.9
	1442	0.4	0.1
	2058	2.2	0.7
3	0154	1.2	0.4
Tu	0811	2.8	0.9
	1501	-0.1	0.0
	2152	2.3	0.7
4	0212	1.5	0.5
W	0815	2.8	0.9
	1523	-0.5	-0.2
	2253	2.3	0.7
5	0227	1.9	0.6
Th	0810	2.9	0.9
	1551	-0.7	-0.2
	2355	2.3	0.7
6	0235	2.1	0.6
F	0800	3.0	0.9
	1623	-0.8	-0.2
7	0757	3.0	0.9
Sa	1655	-0.7	-0.2
8	0758	3.1	0.9
Su	1730	-0.6	-0.2
9	0812	3.1	0.9
M	1809	-0.3	-0.1
10	0823	3.0	0.9
Tu	1857	-0.1	0.0
11	0831	2.9	0.9
W	2001	0.1	0.0
12	0823	2.7	0.8
Th	2128	0.3	0.1
13	0736	2.6	0.8
F	2243	0.4	0.1
14	0723	2.5	0.8
Sa	1527	1.2	0.4
	1753	1.3	0.4
	2325	0.6	0.2
15	0719	2.4	0.7
Su	1438	1.0	0.3
	1906	1.5	0.5

Day	Time	Height	
	h m	ft	m
16	0000	0.7	0.2
M	0719	2.4	0.7
	1405	0.6	0.2
	2004	1.7	0.5
17	0042	1.0	0.3
Tu	0722	2.4	0.7
	1407	0.1	0.0
	2058	1.9	0.6
18	0111	1.2	0.4
W	0725	2.5	0.8
	1432	-0.4	-0.1
	2151	2.1	0.6
19	0143	1.5	0.5
Th	0733	2.6	0.8
	1500	-0.8	-0.2
	2247	2.2	0.7
20	0218	1.8	0.5
F	0736	2.8	0.9
	1536	-1.2	-0.4
	2356	2.3	0.7
21	0236	2.1	0.6
Sa	0741	2.9	0.9
	1616	-1.4	-0.4
22	0756	3.0	0.9
Su	1700	-1.4	-0.4
23	0804	3.1	0.9
M	1748	-1.3	-0.4
24	0812	3.0	0.9
Tu	1841	-1.1	-0.3
25	0807	2.9	0.9
W	1941	-0.8	-0.2
26	0715	2.7	0.8
Th	2051	-0.4	-0.1
27	0642	2.6	0.8
F	2159	0.0	0.0
28	0640	2.5	0.8
Sa	1443	0.9	0.3
	1750	1.1	0.3
	2301	0.5	0.2
29	0643	2.4	0.7
Su	1421	0.4	0.1
	1933	1.3	0.4
	2347	0.9	0.3
30	0650	2.4	0.7
M	1425	-0.1	0.0
	2055	1.6	0.5

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0016	1.3	0.4
Tu	0657	2.4	0.7
	1433	-0.6	-0.2
	2200	1.8	0.5
2	0040	1.7	0.5
W	0659	2.5	0.8
	1456	-1.0	-0.3
	2303	2.0	0.6
3	0059	1.9	0.6
Th	0701	2.6	0.8
	1516	-1.2	-0.4
4	0703	2.7	0.8
F	1545	-1.3	-0.4
5	0708	2.7	0.8
Sa	1614	-1.3	-0.4
6	0719	2.7	0.8
Su	1646	-1.2	-0.4
7	0737	2.7	0.8
M	1718	-1.1	-0.3
8	0756	2.7	0.8
Tu	1754	-0.9	-0.3
9	0817	2.5	0.8
W	1830	-0.7	-0.2
10	0827	2.4	0.7
Th	1905	-0.4	-0.1
11	0736	2.1	0.6
F	1941	-0.1	0.0
12	0606	2.0	0.6
Sa	2016	0.2	0.1
13	0600	1.9	0.6
Su	1531	0.6	0.2
	1750	0.7	0.2
	2104	0.6	0.2
14	0557	1.9	0.6
M	1412	0.4	0.1
	1946	1.0	0.3
	2200	0.9	0.3
15	0557	2.0	0.6
Tu	1340	-0.1	0.0
	2100	1.3	0.4
	2306	1.2	0.4

Day	Time	Height	
	h m	ft	m
16	0601	2.1	0.6
W	1351	-0.6	-0.2
	2145	1.7	0.5
17	0011	1.6	0.5
Th	0612	2.3	0.7
	1420	-1.1	-0.3
	2237	1.9	0.6
18	0101	1.8	0.5
F	0627	2.5	0.8
	1452	-1.6	-0.5
	2329	2.2	0.7
19	0152	2.0	0.6
Sa	0652	2.6	0.8
	1533	-1.9	-0.6
20	0022	2.3	0.7
Su	0233	2.2	0.7
	0719	2.7	0.8
	1616	-2.0	-0.6
21	0100	2.3*	0.7*
M	0748	2.8	0.9
	1700	-2.0	-0.6
22	0100	2.2*	0.7*
Tu	0812	2.7	0.8
	1745	-1.8	-0.5
23	0200	2.2*	0.7*
W	0827	2.5	0.8
	1827	-1.4	-0.4
24	0200	1.9*	0.6*
Th	0815	2.2	0.7
	1908	-0.9	-0.3
25	0439	2.1	0.6
F	1100	1.6*	0.5*
	1940	-0.3	-0.1
26	0454	2.0	0.6
Sa	2002	0.3	0.1
27	0512	1.9	0.6
Su	1356	0.2	0.1
28	0520	1.9	0.6
M	1359	-0.3	-0.1
	2300	1.5*	0.5*
29	0527	2.0	0.6
Tu	1410	-0.8	-0.2
	2200	1.7*	0.5*
30	0528	2.1	0.6
W	1432	-1.1	-0.3
	2200	1.8*	0.5*
31	0536	2.2	0.7
Th	1454	-1.3	-0.4

Time meridian 105° W. 0000 is midnight. 1200 is noon.
Heights are referred to the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SAN DIEGO, CALIFORNIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0316	1.9	0.6	16	0312	2.2	0.7
Th	0930	7.6	2.3	F	0925	6.3	1.9
	1648	-2.0	-0.6		1636	-0.7	-0.2
	2318	4.4	1.3		2303	4.0	1.2
2	0407	1.9	0.6	17	0345	2.2	0.7
F	1019	7.1	2.2	Sa	0953	6.1	1.9
	1733	-1.5	-0.5		1702	-0.5	-0.2
					2331	4.1	1.2
3	0007	4.5	1.4	18	0424	2.2	0.7
Sa	0507	2.0	0.6	Su	1027	5.7	1.7
	1111	6.4	2.0		1728	-0.2	-0.1
	1816	-0.9	-0.3				
4	0056	4.7	1.4	19	0000	4.2	1.3
Su	0613	2.1	0.6	M	0510	2.2	0.7
	1203	5.5	1.7		1102	5.1	1.6
	1900	-0.2	-0.1		1755	0.2	0.1
5	0148	4.8	1.5	20	0035	4.4	1.3
M	0733	2.1	0.6	Tu	0603	2.2	0.7
	1306	4.5	1.4		1144	4.5	1.4
	1945	0.5	0.2		1826	0.7	0.2
6	0243	5.0	1.5	21	0114	4.6	1.4
Tu	0906	1.9	0.6	W	0719	2.0	0.6
	1429	3.7	1.1		1248	3.7	1.1
	2030	1.2	0.4		1900	1.2	0.4
7	0335	5.2	1.6	22	0201	4.9	1.5
W	1039	1.4	0.4	Th	0859	1.7	0.5
	1615	3.2	1.0		1426	3.0	0.9
	2130	1.8	0.5		1943	1.8	0.5
8	0428	5.4	1.6	23	0258	5.2	1.6
Th	1154	0.8	0.2	F	1042	1.0	0.3
	1803	3.1	0.9		1652	2.8	0.9
	2228	2.2	0.7		2052	2.3	0.7
9	0519	5.7	1.7	24	0405	5.6	1.7
F	1247	0.2	0.1	Sa	1156	0.1	0.0
	1916	3.3	1.0		1833	3.2	1.0
	2324	2.4	0.7		2224	2.5	0.8
10	0601	5.9	1.8	25	0511	6.1	1.9
Sa	1331	-0.2	-0.1	Su	1252	-0.7	-0.2
	2008	3.5	1.1		1934	3.6	1.1
					2340	2.5	0.8
11	0016	2.5	0.8	26	0609	6.7	2.0
Su	0639	6.1	1.9	M	1340	-1.4	-0.4
	1407	-0.5	-0.2		2017	4.0	1.2
	2045	3.7	1.1				
12	0059	2.5	0.8	27	0043	2.2	0.7
M	0716	6.2	1.9	Tu	0702	7.2	2.2
	1442	-0.7	-0.2		1424	-1.9	-0.6
	2117	3.8	1.2		2053	4.3	1.3
13	0133	2.4	0.7	28	0139	1.8	0.5
Tu	0750	6.4	2.0	W	0754	7.5	2.3
	1511	-0.9	-0.3		1505	-2.2	-0.7
	2144	3.8	1.2		2132	4.6	1.4
14	0205	2.3	0.7	29	0227	1.5	0.5
W	0824	6.5	2.0	Th	0839	7.6	2.3
	1540	-0.9	-0.3		1544	-2.1	-0.6
	2212	3.9	1.2		2207	4.8	1.5
15	0241	2.3	0.7	30	0316	1.2	0.4
Th	0853	6.4	2.0	F	0925	7.3	2.2
	1609	-0.9	-0.3		1621	-1.8	-0.5
	2237	3.9	1.2		2245	5.0	1.5
				31	0404	1.1	0.3
				Sa	1010	6.8	2.1
					1657	-1.2	-0.4
					2321	5.1	1.6

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0453	1.1	0.3	16	0417	1.2	0.4
Su	1054	6.0	1.8	M	1016	5.4	1.6
	1731	-0.5	-0.2		1643	0.0	0.0
					2304	4.9	1.5
2	0000	5.2	1.6	17	0459	1.1	0.3
M	0549	1.2	0.4	Tu	1052	4.8	1.5
	1141	5.0	1.5		1707	0.5	0.2
	1803	0.2	0.1		2331	5.1	1.6
3	0038	5.2	1.6	18	0548	1.1	0.3
Tu	0653	1.4	0.4	W	1138	4.1	1.2
	1234	4.0	1.2		1733	1.1	0.3
	1836	1.0	0.3				
4	0123	5.1	1.6	19	0008	5.2	1.6
W	0813	1.4	0.4	Th	0657	1.1	0.3
	1349	3.2	1.0		1240	3.3	1.0
	1911	1.8	0.5		1759	1.6	0.5
5	0217	5.0	1.5	20	0056	5.2	1.6
Th	0959	1.3	0.4	F	0830	1.0	0.3
	1615	2.7	0.8		1439	2.7	0.8
	1949	2.4	0.7		1829	2.2	0.7
6	0320	5.0	1.5	21	0204	5.2	1.6
F	1136	0.8	0.2	Sa	1023	0.5	0.2
	1851	2.9	0.9		1751	2.8	0.9
	2119	2.8	0.9		1952	2.7	0.8
7	0434	5.1	1.6	22	0334	5.4	1.6
Sa	1235	0.3	0.1	Su	1145	-0.2	-0.1
	1948	3.3	1.0		1855	3.3	1.0
	2309	2.9	0.9		2222	2.9	0.9
8	0537	5.3	1.6	23	0458	5.8	1.8
Su	1320	-0.1	0.0	M	1241	-0.9	-0.3
	2013	3.6	1.1		1927	3.8	1.2
					2350	2.5	0.8
9	0014	2.8	0.9	24	0604	6.4	2.0
M	0626	5.6	1.7	Tu	1324	-1.4	-0.4
	1352	-0.5	-0.2		1959	4.3	1.3
	2035	3.8	1.2				
10	0058	2.5	0.8	25	0051	1.9	0.6
Tu	0705	5.9	1.8	W	0700	6.8	2.1
	1421	-0.7	-0.2		1405	-1.7	-0.5
	2056	3.9	1.2		2031	4.7	1.4
11	0133	2.2	0.7	26	0139	1.3	0.4
W	0740	6.1	1.9	Th	0747	7.0	2.1
	1450	-0.9	-0.3		1441	-1.8	-0.5
	2115	4.1	1.2		2103	5.1	1.6
12	0205	1.9	0.6	27	0225	0.8	0.2
Th	0812	6.3	1.9	F	0832	7.0	2.1
	1514	-0.9	-0.3		1515	-1.6	-0.5
	2137	4.3	1.3		2131	5.4	1.6
13	0237	1.7	0.5	28	0310	0.4	0.1
F	0844	6.3	1.9	Sa	0916	6.6	2.0
	1537	-0.8	-0.2		1545	-1.1	-0.3
	2155	4.4	1.3		2203	5.6	1.7
14	0306	1.5	0.5				
Sa	0913	6.2	1.9				
	1601	-0.7	-0.2				
	2217	4.6	1.4				
15	0341	1.3	0.4				
Su	0942	5.9	1.8				
	1624	-0.4	-0.1				
	2240	4.8	1.5				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0353	0.2	0.1	16	0329	0.3	0.1
Su	0958	6.0	1.8	M	0932	5.3	1.6
	1617	-0.6	-0.2		1541	0.1	0.0
	2232	5.7	1.7		2152	5.5	1.7
2	0439	0.2	0.1	17	0408	0.1	0.0
M	1041	5.3	1.6	Tu	1009	4.8	1.5
	1643	0.1	0.0		1603	0.5	0.2
	2302	5.6	1.7		2217	5.7	1.7
3	0525	0.4	0.1	18	0450	0.0	0.0
Tu	1122	4.4	1.3	W	1051	4.2	1.3
	1711	0.9	0.3		1625	1.1	0.3
	2334	5.5	1.7		2249	5.7	1.7
4	0615	0.6	0.2	19	0542	0.1	0.0
W	1211	3.6	1.1	Th	1146	3.6	1.1
	1732	1.6	0.5		1651	1.6	0.5
					2325	5.7	1.7
5	0008	5.2	1.6	20	0648	0.2	0.1
Th	0724	0.9	0.3	F	1305	2.9	0.9
	1325	2.8	0.9		1718	2.1	0.6
	1744	2.2	0.7				
6	0050	4.9	1.5	21	0016	5.5	1.7
F	0903	1.1	0.3	Sa	0818	0.3	0.1
					1547	2.7	0.8
					1750	2.6	0.8
7	0157	4.6	1.4	22	0133	5.2	1.6
Sa	1055	0.8	0.2	Su	1007	0.0	0.0
					1758	3.2	1.0
					2027	3.1	0.9
8	0339	4.5	1.4	23	0320	5.2	1.6
Su	1204	0.4	0.1	M	1121	-0.5	-0.2
	1942	3.5	1.1		1833	3.7	1.1
	2308	3.1	0.9		2246	2.8	0.9
9	0505	4.7	1.4	24	0450	5.5	1.7
M	1246	0.0	0.0	Tu	1214	-0.9	-0.3
	1945	3.7	1.1		1859	4.2	1.3
					2357	2.1	0.6
10	0012	2.7	0.8	25	0556	5.9	1.8
Tu	0604	5.1	1.6	W	1259	-1.1	-0.3
	1318	-0.3	-0.1		1929	4.7	1.4
	2000	4.0	1.2				
11	0051	2.3	0.7	26	0051	1.3	0.4
W	0646	5.5	1.7	Th	0651	6.1	1.9
	1347	-0.5	-0.2		1334	-1.2	-0.4
	2016	4.2	1.3		1955	5.2	1.6
12	0121	1.8	0.5	27	0136	0.6	0.2
Th	0721	5.7	1.7	F	0737	6.2	1.9
	1411	-0.6	-0.2		1409	-1.0	-0.3
	2032	4.5	1.4		2024	5.6	1.7
13	0152	1.4	0.4	28	0221	0.1	0.0
F	0753	5.8	1.8	Sa	0825	6.0	1.8
	1433	-0.6	-0.2		1439	-0.7	-0.2
	2051	4.8	1.5		2052	5.9	1.8
14	0224	1.0	0.3	29	0301	-0.3	-0.1
Sa	0825	5.8	1.8	Su	0905	5.6	1.7
	1455	-0.5	-0.2		1507	-0.2	-0.1
	2109	5.0	1.5		2121	6.1	1.9
15	0256	0.6	0.2	30	0340	-0.5	-0.2
Su	0857	5.6	1.7	M	0945	5.0	1.5
	1516	-0.3	-0.1		1535	0.4	0.1
	2130	5.3	1.6		2146	6.1	1.9
				31	0421	-0.5	-0.2
				Tu	1028	4.4	1.3
					1557	1.0	0.3
					2212	5.9	1.8

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0502	-0.3	-0.1	16	0445	-0.9	-0.3
W	1110	3.8	1.2	Th	1106	3.8	1.2
	1618	1.5	0.5		1556	1.7	0.5
	2240	5.7	1.7		2221	6.3	1.9
2	0549	0.0	0.0	17	0540	-0.8	-0.2
Th	1203	3.2	1.0	F	1213	3.3	1.0
	1633	2.0	0.6		1628	2.1	0.6
	2309	5.3	1.6		2301	6.0	1.8
3	0645	0.4	0.1	18	0650	-0.5	-0.2
F	1324	2.7	0.8	Sa	1349	3.0	0.9
	1634	2.5	0.8		1710	2.6	0.8
	2344	4.9	1.5				
4	0804	0.7	0.2	19	0003	5.6	1.7
Sa				Su	0809	-0.4	-0.1
					1556	3.2	1.0
					1840	3.0	0.9
5	0037	4.5	1.4	20	0125	5.2	1.6
Su	0950	0.7	0.2	M	0936	-0.4	-0.1
					1705	3.7	1.1
					2112	3.0	0.9
6	0227	4.2	1.3	21	0308	5.0	1.5
M	1105	0.5	0.2	Tu	1045	-0.5	-0.2
	1857	3.6	1.1		1746	4.2	1.3
	2247	3.1	0.9		2252	2.4	0.7
7	0416	4.3	1.3	22	0434	5.0	1.5
Tu	1153	0.2	0.1	W	1137	-0.6	-0.2
	1858	3.8	1.2		1818	4.8	1.5
	2348	2.6	0.8		2356	1.5	0.5
8	0522	4.6	1.4	23	0543	5.1	1.6
W	1229	0.0	0.0	Th	1217	-0.5	-0.2
	1910	4.2	1.3		1851	5.3	1.6
9	0027	2.0	0.6	24	0046	0.7	0.2
Th	0610	4.8	1.5	F	0642	5.2	1.6
	1254	-0.1	0.0		1256	-0.3	-0.1
	1924	4.5	1.4		1919	5.8	1.8
10	0059	1.4	0.4	25	0132	0.1	0.0
F	0651	5.0	1.5	Sa	0731	5.1	1.6
	1320	-0.1	0.0		1329	0.0	0.0
	1940	4.9	1.5		1948	6.1	1.9
11	0131	0.8	0.2	26	0214	-0.5	-0.2
Sa	0731	5.1	1.6	Su	0817	4.8	1.5
	1345	0.0	0.0		1358	0.4	0.1
	2001	5.3	1.6		2013	6.3	1.9
12	0206	0.3	0.1	27	0252	-0.8	-0.2
Su	0807	5.1	1.6	M	0859	4.5	1.4
	1409	0.2	0.1		1427	0.9	0.3
	2022	5.7	1.7		2040	6.4	2.0
13	0242	-0.2	-0.1	28	0331	-0.9	-0.3
M	0845	4.9	1.5	Tu	0942	4.2	1.3
	1434	0.4	0.1		1452	1.3	0.4
	2045	6.0	1.8		2107	6.3	1.9
14	0317	-0.6	-0.2	29	0406	-0.8	-0.2
Tu	0927	4.6	1.4	W	1025	3.8	1.2
	1459	0.8	0.2		1515	1.7	0.5
	2113	6.3	1.9		2133	6.1	1.9
15	0359	-0.8	-0.2	30	0445	-0.6	-0.2
W	1013	4.3	1.3	Th	1110	3.4	1.0
	1527	1.2	0.4		1536	2.1	0.6
	2142	6.3	1.9		2201	5.8	1.8

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0530	-0.3	-0.1	16	0542	-1.4	-0.4
F	1210	3.1	0.9	Sa	1231	3.5	1.1
	1555	2.5	0.8		1630	2.5	0.8
	2230	5.5	1.7		2259	6.4	2.0
2	0619	0.0	0.0	17	0644	-1.1	-0.3
Sa	1335	2.9	0.9	Su	1351	3.6	1.1
	1609	2.8	0.9		1742	2.8	0.9
	2307	5.1	1.6				
3	0722	0.3	0.1	18	0001	5.8	1.8
Su	2357	4.7	1.4	M	0750	-0.8	-0.2
					1507	3.8	1.2
					1922	2.9	0.9
4	0838	0.4	0.1	19	0120	5.3	1.6
M				Tu	0857	-0.5	-0.2
					1606	4.3	1.3
					2112	2.6	0.8
5	0117	4.3	1.3	20	0249	4.8	1.5
Tu	0945	0.5	0.2	W	0957	-0.3	-0.1
	1737	3.7	1.1		1654	4.8	1.5
	2151	3.2	1.0		2239	1.9	0.6
6	0300	4.1	1.2	21	0415	4.5	1.4
W	1037	0.4	0.1	Th	1048	0.0	0.0
	1751	4.0	1.2		1732	5.3	1.6
	2306	2.6	0.8		2345	1.1	0.3
7	0423	4.1	1.2	22	0529	4.3	1.3
Th	1116	0.4	0.1	F	1133	0.4	0.1
	1807	4.4	1.3		1806	5.8	1.8
	2352	1.9	0.6				
8	0525	4.2	1.3	23	0041	0.4	0.1
F	1150	0.5	0.2	Sa	0631	4.2	1.3
	1825	4.9	1.5		1212	0.7	0.2
					1839	6.1	1.9
9	0034	1.2	0.4	24	0126	-0.2	-0.1
Sa	0620	4.3	1.3	Su	0728	4.1	1.2
	1222	0.6	0.2		1247	1.1	0.3
	1847	5.4	1.6		1910	6.4	2.0
10	0113	0.4	0.1	25	0205	-0.6	-0.2
Su	0707	4.3	1.3	M	0817	4.0	1.2
	1251	0.7	0.2		1319	1.5	0.5
	1910	5.9	1.8		1939	6.5	2.0
11	0148	-0.3	-0.1	26	0244	-0.9	-0.3
M	0755	4.4	1.3	Tu	0903	3.9	1.2
	1320	1.0	0.3		1351	1.8	0.5
	1939	6.3	1.9		2009	6.5	2.0
12	0227	-0.9	-0.3	27	0322	-1.0	-0.3
Tu	0842	4.3	1.3	W	0948	3.7	1.1
	1352	1.2	0.4		1417	2.1	0.6
	2009	6.7	2.0		2037	6.4	2.0
13	0309	-1.3	-0.4	28	0358	-0.9	-0.3
W	0930	4.1	1.2	Th	1033	3.6	1.1
	1426	1.5	0.5		1448	2.3	0.7
	2043	6.9	2.1		2108	6.2	1.9
14	0356	-1.5	-0.5	29	0435	-0.8	-0.2
Th	1023	3.9	1.2	F	1115	3.4	1.0
	1502	1.8	0.5		1513	2.5	0.8
	2124	6.9	2.1		2140	6.0	1.8
15	0446	-1.5	-0.5	30	0515	-0.5	-0.2
F	1123	3.7	1.1	Sa	1208	3.3	1.0
	1542	2.2	0.7		1545	2.7	0.8
	2207	6.7	2.0		2212	5.7	1.7
				31	0557	-0.3	-0.1
				Su	1307	3.3	1.0
					1624	2.9	0.9
					2250	5.4	1.6

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0642	0.0	0.0	16	0717	-0.8	-0.2
M	1412	3.3	1.0	Tu	1411	4.5	1.4
	1706	3.1	0.9		1921	2.5	0.8
	2335	5.0	1.5				
2	0732	0.2	0.1	17	0103	5.2	1.6
Tu	1511	3.6	1.1	W	0809	-0.2	-0.1
	1840	3.2	1.0		1506	4.9	1.5
					2055	2.2	0.7
3	0027	4.5	1.4	18	0224	4.5	1.4
W	0821	0.5	0.2	Th	0903	0.3	0.1
	1553	3.9	1.2		1557	5.3	1.6
	2039	3.1	0.9		2223	1.6	0.5
4	0147	4.1	1.2	19	0354	3.9	1.2
Th	0907	0.7	0.2	F	0952	0.9	0.3
	1625	4.3	1.3		1644	5.7	1.7
	2210	2.6	0.8		2333	0.9	0.3
5	0314	3.7	1.1	20	0521	3.6	1.1
F	0953	0.9	0.3	Sa	1044	1.4	0.4
	1654	4.7	1.4		1726	6.0	1.8
	2316	1.8	0.5				
6	0439	3.6	1.1	21	0035	0.3	0.1
Sa	1037	1.1	0.3	Su	0635	3.6	1.1
	1721	5.2	1.6		1130	1.8	0.5
					1805	6.2	1.9
7	0004	1.0	0.3	22	0118	-0.2	-0.1
Su	0552	3.6	1.1	M	0739	3.6	1.1
	1116	1.4	0.4		1212	2.1	0.6
	1753	5.8	1.8		1840	6.4	2.0
8	0054	0.2	0.1	23	0200	-0.6	-0.2
M	0655	3.7	1.1	Tu	0829	3.7	1.1
	1158	1.6	0.5		1254	2.3	0.7
	1828	6.3	1.9		1916	6.5	2.0
9	0136	-0.6	-0.2	24	0241	-0.8	-0.2
Tu	0750	3.9	1.2	W	0914	3.7	1.1
	1240	1.8	0.5		1329	2.4	0.7
	1903	6.8	2.1		1948	6.5	2.0
10	0218	-1.2	-0.4	25	0314	-0.8	-0.2
W	0845	4.0	1.2	Th	0953	3.7	1.1
	1323	1.9	0.6		1405	2.5	0.8
	1945	7.2	2.2		2024	6.5	2.0
11	0303	-1.7	-0.5	26	0349	-0.8	-0.2
Th	0936	4.0	1.2	F	1028	3.7	1.1
	1404	2.0	0.6		1437	2.6	0.8
	2027	7.4	2.3		2055	6.4	2.0
12	0352	-1.9	-0.6	27	0422	-0.7	-0.2
F	1027	4.0	1.2	Sa	1100	3.7	1.1
	1453	2.1	0.6		1509	2.6	0.8
	2115	7.4	2.3		2127	6.3	1.9
13	0441	-1.9	-0.6	28	0457	-0.6	-0.2
Sa	1120	4.0	1.2	Su	1139	3.7	1.1
	1545	2.3	0.7		1545	2.7	0.8
	2204	7.2	2.2		2159	6.0	1.8
14	0531	-1.7	-0.5	29	0529	-0.4	-0.1
Su	1216	4.1	1.2	M	1211	3.8	1.2
	1643	2.4	0.7		1624	2.8	0.9
	2257	6.7	2.0		2234	5.7	1.7
15	0623	-1.3	-0.4	30	0601	-0.1	0.0
M	1312	4.2	1.3	Tu	1249	3.9	1.2
	1755	2.5	0.8		1710	2.8	0.9
	2355	6.0	1.8		2310	5.3	1.6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN DIEGO, CALIFORNIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0633	0.2	0.1
W	1328	4.0	1.2
	1816	2.9	0.9
	2355	4.7	1.4
2	0709	0.6	0.2
Th	1407	4.3	1.3
	1938	2.8	0.9
3	0054	4.1	1.2
F	0743	1.0	0.3
	1452	4.6	1.4
	2111	2.4	0.7
4	0215	3.5	1.1
Sa	0825	1.4	0.4
	1533	5.0	1.5
	2234	1.7	0.5
5	0400	3.2	1.0
Su	0918	1.8	0.5
	1619	5.5	1.7
	2343	0.9	0.3
6	0545	3.2	1.0
M	1017	2.1	0.6
	1705	6.0	1.8
7	0035	0.1	0.0
Tu	0659	3.5	1.1
	1116	2.3	0.7
	1756	6.6	2.0
8	0124	-0.7	-0.2
W	0759	3.8	1.2
	1215	2.4	0.7
	1844	7.1	2.2
9	0211	-1.4	-0.4
Th	0845	4.0	1.2
	1307	2.3	0.7
	1933	7.5	2.3
10	0255	-1.8	-0.5
F	0931	4.2	1.3
	1400	2.1	0.6
	2021	7.7	2.3
11	0340	-2.0	-0.6
Sa	1013	4.4	1.3
	1453	2.0	0.6
	2110	7.7	2.3
12	0425	-1.9	-0.6
Su	1055	4.6	1.4
	1546	1.9	0.6
	2159	7.4	2.3
13	0509	-1.6	-0.5
M	1139	4.8	1.5
	1643	1.9	0.6
	2251	6.8	2.1
14	0549	-1.0	-0.3
Tu	1226	5.0	1.5
	1746	1.9	0.6
	2343	5.9	1.8
15	0634	-0.3	-0.1
W	1311	5.2	1.6
	1900	1.9	0.6
16	0042	5.0	1.5
Th	0717	0.4	0.1
	1402	5.3	1.6
	2022	1.8	0.5
17	0158	4.1	1.2
F	0800	1.2	0.4
	1455	5.5	1.7
	2152	1.4	0.4
18	0336	3.4	1.0
Sa	0853	1.8	0.5
	1551	5.7	1.7
	2318	0.9	0.3
19	0529	3.3	1.0
Su	0951	2.4	0.7
	1648	5.8	1.8
20	0023	0.4	0.1
M	0656	3.4	1.0
	1056	2.7	0.8
	1737	6.0	1.8
21	0112	0.0	0.0
Tu	0752	3.7	1.1
	1157	2.8	0.9
	1822	6.2	1.9
22	0153	-0.4	-0.1
W	0834	3.9	1.2
	1246	2.8	0.9
	1905	6.3	1.9
23	0229	-0.5	-0.2
Th	0906	4.0	1.2
	1324	2.7	0.8
	1939	6.5	2.0
24	0301	-0.6	-0.2
F	0934	4.1	1.2
	1402	2.5	0.8
	2013	6.6	2.0
25	0329	-0.7	-0.2
Sa	1001	4.1	1.2
	1434	2.4	0.7
	2046	6.5	2.0
26	0357	-0.6	-0.2
Su	1024	4.2	1.3
	1506	2.3	0.7
	2115	6.4	2.0
27	0422	-0.5	-0.2
M	1049	4.3	1.3
	1540	2.3	0.7
	2147	6.2	1.9
28	0448	-0.2	-0.1
Tu	1115	4.4	1.3
	1617	2.3	0.7
	2219	5.8	1.8
29	0512	0.1	0.0
W	1140	4.5	1.4
	1657	2.3	0.7
	2251	5.3	1.6
30	0534	0.5	0.2
Th	1212	4.7	1.4
	1749	2.2	0.7
	2330	4.7	1.4
31	0603	1.0	0.3
F	1244	4.9	1.5
	1856	2.2	0.7

AUGUST

Day	Time h m	Height ft	Height m
1	0023	4.0	1.2
Sa	0630	1.5	0.5
	1322	5.1	1.6
	2018	2.0	0.6
2	0145	3.3	1.0
Su	0706	2.0	0.6
	1418	5.3	1.6
	2201	1.5	0.5
3	0400	3.0	0.9
M	0802	2.5	0.8
	1527	5.6	1.7
	2324	0.7	0.2
4	0606	3.2	1.0
Tu	0931	2.8	0.9
	1634	6.1	1.9
5	0023	-0.1	0.0
W	0710	3.6	1.1
	1100	2.8	0.9
	1737	6.6	2.0
6	0115	-0.8	-0.2
Th	0752	4.0	1.2
	1214	2.6	0.8
	1835	7.2	2.2
7	0200	-1.4	-0.4
F	0830	4.4	1.3
	1310	2.2	0.7
	1927	7.6	2.3
8	0241	-1.7	-0.5
Sa	0905	4.8	1.5
	1401	1.8	0.5
	2016	7.8	2.4
9	0320	-1.7	-0.5
Su	0940	5.1	1.6
	1453	1.4	0.4
	2103	7.6	2.3
10	0359	-1.5	-0.5
M	1016	5.4	1.6
	1540	1.2	0.4
	2150	7.2	2.2
11	0433	-1.0	-0.3
Tu	1054	5.6	1.7
	1633	1.1	0.3
	2236	6.4	2.0
12	0510	-0.3	-0.1
W	1131	5.7	1.7
	1728	1.1	0.3
	2326	5.5	1.7
13	0544	0.5	0.2
Th	1211	5.7	1.7
	1831	1.2	0.4
14	0021	4.5	1.4
F	0616	1.3	0.4
	1253	5.6	1.7
	1946	1.3	0.4
15	0135	3.7	1.1
Sa	0653	2.0	0.6
	1346	5.5	1.7
	2123	1.3	0.4
16	0340	3.2	1.0
Su	0737	2.7	0.8
	1453	5.4	1.6
	2259	1.0	0.3
17	0609	3.3	1.0
M	0906	3.1	0.9
	1606	5.4	1.6
18	0005	0.5	0.2
Tu	0718	3.7	1.1
	1055	3.2	1.0
	1716	5.6	1.7
19	0057	0.2	0.1
W	0753	4.0	1.2
	1201	3.1	0.9
	1809	5.9	1.8
20	0133	-0.1	0.0
Th	0815	4.2	1.3
	1246	2.8	0.9
	1852	6.1	1.9
21	0205	-0.3	-0.1
F	0837	4.4	1.3
	1323	2.5	0.8
	1927	6.3	1.9
22	0232	-0.4	-0.1
Sa	0858	4.5	1.4
	1355	2.2	0.7
	1959	6.5	2.0
23	0257	-0.4	-0.1
Su	0917	4.7	1.4
	1424	2.0	0.6
	2031	6.4	2.0
24	0319	-0.3	-0.1
M	0938	4.8	1.5
	1456	1.7	0.5
	2100	6.3	1.9
25	0342	-0.1	0.0
Tu	0957	5.0	1.5
	1528	1.6	0.5
	2131	6.0	1.8
26	0404	0.2	0.1
W	1019	5.2	1.6
	1603	1.5	0.5
	2200	5.5	1.7
27	0422	0.6	0.2
Th	1042	5.3	1.6
	1641	1.4	0.4
	2235	5.0	1.5
28	0444	1.0	0.3
F	1107	5.4	1.6
	1728	1.4	0.4
	2318	4.4	1.3
29	0506	1.5	0.5
Sa	1134	5.5	1.7
	1827	1.4	0.4
30	0016	3.7	1.1
Su	0528	2.1	0.6
	1218	5.5	1.7
	1949	1.4	0.4
31	0155	3.1	0.9
M	0557	2.6	0.8
	1318	5.5	1.7
	2139	1.1	0.3

SEPTEMBER

Day	Time h m	Height ft	Height m
1	1449	5.6	1.7
Tu	2308	0.4	0.1
2	0638	3.6	1.1
W	0939	3.3	1.0
	1620	5.9	1.8
3	0007	-0.2	-0.1
Th	0703	4.1	1.2
	1119	2.9	0.9
	1732	6.5	2.0
4	0054	-0.8	-0.2
F	0735	4.5	1.4
	1221	2.3	0.7
	1830	7.0	2.1
5	0136	-1.2	-0.4
Sa	0801	5.0	1.5
	1313	1.7	0.5
	1920	7.3	2.2
6	0213	-1.3	-0.4
Su	0833	5.4	1.6
	1401	1.1	0.3
	2007	7.3	2.2
7	0247	-1.1	-0.3
M	0903	5.8	1.8
	1446	0.6	0.2
	2053	7.0	2.1
8	0321	-0.7	-0.2
Tu	0933	6.1	1.9
	1532	0.3	0.1
	2138	6.4	2.0
9	0353	-0.1	0.0
W	1004	6.3	1.9
	1619	0.2	0.1
	2224	5.7	1.7
10	0422	0.6	0.2
Th	1038	6.3	1.9
	1706	0.3	0.1
	2310	4.9	1.5
11	0451	1.3	0.4
F	1112	6.1	1.9
	1802	0.6	0.2
12	0007	4.0	1.2
Sa	0517	2.0	0.6
	1147	5.8	1.8
	1906	0.9	0.3
13	0125	3.4	1.0
Su	0541	2.7	0.8
	1233	5.4	1.6
	2039	1.1	0.3
14	1340	5.1	1.6
M	2223	1.0	0.3
15	1523	4.9	1.5
Tu	2335	0.7	0.2
16	0707	4.0	1.2
W	1100	3.5	1.1
	1649	5.1	1.6
17	0022	0.3	0.1
Th	0721	4.3	1.3
	1201	3.0	0.9
	1748	5.4	1.6
18	0059	0.1	0.0
F	0736	4.5	1.4
	1238	2.6	0.8
	1830	5.7	1.7
19	0126	0.0	0.0
Sa	0754	4.7	1.4
	1309	2.1	0.6
	1907	5.9	1.8
20	0151	-0.1	0.0
Su	0812	5.0	1.5
	1342	1.7	0.5
	1940	6.0	1.8
21	0213	0.0	0.0
M	0830	5.3	1.6
	1413	1.3	0.4
	2012	5.9	1.8
22	0235	0.1	0.0
Tu	0849	5.5	1.7
	1441	1.0	0.3
	2044	5.8	1.8
23	0256	0.4	0.1
W	0908	5.7	1.7
	1513	0.7	0.2
	2116	5.4	1.6
24	0318	0.7	0.2
Th	0928	5.9	1.8
	1550	0.5	0.2
	2152	5.0	1.5
25	0336	1.2	0.4
F	0953	6.1	1.9
	1627	0.4	0.1
	2233	4.5	1.4
26	0358	1.6	0.5
Sa	1018	6.1	1.9
	1715	0.5	0.2
	2321	3.9	1.2
27	0420	2.1	0.6
Su	1054	6.0	1.8
	1815	0.6	0.2
28	0034	3.3	1.0
M	0443	2.6	0.8
	1139	5.8	1.8
	1937	0.7	0.2
29	1247	5.6	1.7
Tu	2123	0.5	0.2
30	1430	5.5	1.7
W	2242	0.1	0.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN DIEGO, CALIFORNIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0606	4.0	1.2	16	0635	4.4	1.3
Th	1009	3.3	1.0	F	1141	2.9	0.9
	1608	5.7	1.7		1709	4.8	1.5
	2340	-0.3	-0.1				
2	0633	4.6	1.4	17	0006	0.4	0.1
F	1129	2.6	0.8	Sa	0650	4.7	1.4
	1722	6.0	1.8		1217	2.3	0.7
					1757	5.0	1.5
3	0025	-0.6	-0.2	18	0035	0.4	0.1
Sa	0657	5.1	1.6	Su	0705	5.1	1.6
	1225	1.8	0.5		1252	1.7	0.5
	1821	6.3	1.9		1839	5.2	1.6
4	0104	-0.7	-0.2	19	0102	0.4	0.1
Su	0727	5.6	1.7	M	0723	5.4	1.6
	1310	1.0	0.3		1321	1.2	0.4
	1913	6.4	2.0		1918	5.2	1.6
5	0139	-0.6	-0.2	20	0124	0.5	0.2
M	0755	6.1	1.9	Tu	0742	5.8	1.8
	1356	0.3	0.1		1353	0.6	0.2
	1959	6.3	1.9		1953	5.2	1.6
6	0211	-0.2	-0.1	21	0147	0.7	0.2
Tu	0825	6.5	2.0	W	0800	6.1	1.9
	1438	-0.2	-0.1		1426	0.2	0.1
	2044	6.0	1.8		2031	5.0	1.5
7	0240	0.2	0.1	22	0210	1.0	0.3
W	0854	6.7	2.0	Th	0825	6.4	2.0
	1520	-0.4	-0.1		1501	-0.2	-0.1
	2128	5.4	1.6		2108	4.8	1.5
8	0311	0.8	0.2	23	0233	1.3	0.4
Th	0922	6.8	2.1	F	0847	6.6	2.0
	1602	-0.5	-0.2		1539	-0.4	-0.1
	2212	4.9	1.5		2152	4.4	1.3
9	0336	1.4	0.4	24	0257	1.7	0.5
F	0951	6.6	2.0	Sa	0915	6.7	2.0
	1647	-0.3	-0.1		1622	-0.5	-0.2
	2301	4.2	1.3		2241	4.0	1.2
10	0402	2.0	0.6	25	0326	2.1	0.6
Sa	1022	6.3	1.9	Su	0951	6.6	2.0
	1736	0.1	0.0		1710	-0.4	-0.1
					2342	3.6	1.1
11	0000	3.7	1.1	26	0354	2.5	0.8
Su	0423	2.5	0.8	M	1030	6.4	2.0
	1054	5.9	1.8		1813	-0.2	-0.1
	1834	0.5	0.2				
12	0131	3.2	1.0	27	0109	3.3	1.0
M	0432	3.0	0.9	Tu	0430	2.9	0.9
	1131	5.4	1.6		1123	6.1	1.9
	1951	0.8	0.2		1930	0.0	0.0
13	1227	4.9	1.5	28	0318	3.5	1.1
Tu	2128	0.9	0.3	W	0539	3.3	1.0
					1238	5.6	1.7
					2054	0.0	0.0
14	1416	4.6	1.4	29	0442	3.9	1.2
W	2244	0.7	0.2	Th	0817	3.5	1.1
					1418	5.3	1.6
					2205	-0.1	0.0
15	0632	4.1	1.2	30	0517	4.5	1.4
Th	1045	3.5	1.1	F	1016	2.9	0.9
	1559	4.6	1.4		1554	5.2	1.6
	2333	0.5	0.2		2301	-0.2	-0.1
				31	0549	5.0	1.5
				Sa	1127	2.0	0.6
					1713	5.3	1.6
					2347	-0.1	0.0

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0620	5.6	1.7	16	0609	5.2	1.6
Su	1219	1.1	0.3	M	1228	1.5	0.5
	1812	5.4	1.6		1809	4.3	1.3
2	0025	0.1	0.0	17	0002	1.0	0.3
M	0649	6.2	1.9	Tu	0631	5.7	1.7
	1308	0.3	0.1		1303	0.7	0.2
	1907	5.3	1.6		1859	4.3	1.3
3	0101	0.4	0.1	18	0031	1.2	0.4
Tu	0720	6.6	2.0	W	0654	6.1	1.9
	1351	-0.3	-0.1		1338	0.1	0.0
	1955	5.1	1.6		1942	4.4	1.3
4	0133	0.7	0.2	19	0059	1.4	0.4
W	0750	6.9	2.1	Th	0721	6.5	2.0
	1432	-0.7	-0.2		1414	-0.5	-0.2
	2043	4.9	1.5		2027	4.3	1.3
5	0201	1.2	0.4	20	0131	1.6	0.5
Th	0819	7.0	2.1	F	0750	6.9	2.1
	1511	-0.9	-0.3		1452	-0.9	-0.3
	2127	4.5	1.4		2111	4.2	1.3
6	0232	1.6	0.5	21	0203	1.8	0.5
F	0847	6.9	2.1	Sa	0822	7.1	2.2
	1553	-0.9	-0.3		1534	-1.2	-0.4
	2214	4.2	1.3		2200	4.1	1.2
7	0257	2.1	0.6	22	0235	2.1	0.6
Sa	0917	6.7	2.0	Su	0858	7.2	2.2
	1632	-0.7	-0.2		1620	-1.3	-0.4
	2301	3.8	1.2		2252	3.9	1.2
8	0323	2.4	0.7	23	0311	2.3	0.7
Su	0945	6.4	2.0	M	0940	7.0	2.1
	1717	-0.3	-0.1		1712	-1.1	-0.3
					2355	3.7	1.1
9	0000	3.5	1.1	24	0358	2.6	0.8
M	0348	2.8	0.9	Tu	1027	6.7	2.0
	1017	6.0	1.8		1808	-0.9	-0.3
	1807	0.0	0.0				
10	0125	3.3	1.0	25	0106	3.7	1.1
Tu	0406	3.1	0.9	W	0457	2.9	0.9
	1056	5.5	1.7		1124	6.2	1.9
	1907	0.4	0.1		1909	-0.6	-0.2
11	1144	5.0	1.5	26	0223	3.9	1.2
W	2017	0.6	0.2	Th	0624	3.1	0.9
					1233	5.6	1.7
					2016	-0.3	-0.1
12	1257	4.5	1.4	27	0329	4.3	1.3
Th	2124	0.7	0.2	F	0821	2.9	0.9
					1359	5.0	1.5
					2116	0.0	0.0
13	0523	4.0	1.2	28	0420	4.8	1.5
F	0946	3.5	1.1	Sa	1005	2.3	0.7
	1436	4.2	1.3		1535	4.6	1.4
	2220	0.8	0.2		2212	0.3	0.1
14	0535	4.4	1.3	29	0503	5.4	1.6
Sa	1103	2.9	0.9	Su	1119	1.5	0.5
	1609	4.2	1.3		1658	4.4	1.3
	2259	0.8	0.2		2303	0.6	0.2
15	0553	4.8	1.5	30	0540	6.0	1.8
Su	1149	2.2	0.7	M	1217	0.6	0.2
	1716	4.2	1.3		1807	4.3	1.3
	2332	0.9	0.3		2345	1.0	0.3

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0614	6.4	2.0	16	0538	5.7	1.7
Tu	1305	-0.1	0.0	W	1246	0.5	0.2
	1910	4.2	1.3		1849	3.6	1.1
					2339	1.9	0.6
2	0024	1.3	0.4	17	0612	6.2	1.9
W	0651	6.7	2.0	Th	1326	-0.3	-0.1
	1348	-0.7	-0.2		1942	3.8	1.2
	2000	4.2	1.3				
3	0059	1.7	0.5	18	0021	2.0	0.6
Th	0723	6.9	2.1	F	0649	6.7	2.0
	1427	-1.0	-0.3		1405	-0.9	-0.3
	2050	4.1	1.2		2031	3.9	1.2
4	0136	1.9	0.6	19	0103	2.1	0.6
F	0755	6.9	2.1	Sa	0728	7.1	2.2
	1509	-1.1	-0.3		1447	-1.4	-0.4
	2135	4.0	1.2		2116	4.0	1.2
5	0207	2.2	0.7	20	0145	2.1	0.6
Sa	0826	6.8	2.1	Su	0809	7.4	2.3
	1546	-1.1	-0.3		1531	-1.7	-0.5
	2217	3.9	1.2		2203	4.0	1.2
6	0239	2.4	0.7	21	0231	2.1	0.6
Su	0855	6.7	2.0	M	0852	7.5	2.3
	1622	-0.9	-0.3		1617	-1.8	-0.5
	2302	3.7	1.1		2249	4.1	1.2
7	0307	2.6	0.8	22	0319	2.2	0.7
M	0927	6.4	2.0	Tu	0938	7.4	2.3
	1702	-0.6	-0.2		1702	-1.7	-0.5
	2347	3.6	1.1		2339	4.1	1.2
8	0342	2.8	0.9	23	0412	2.2	0.7
Tu	1001	6.1	1.9	W	1027	7.0	2.1
	1739	-0.3	-0.1		1749	-1.4	-0.4
9	0037	3.5	1.1	24	0031	4.2	1.3
W	0414	3.0	0.9	Th	0515	2.3	0.7
	1038	5.7	1.7		1122	6.3	1.9
	1823	0.0	0.0		1838	-0.9	-0.3
10	0136	3.5	1.1	25	0124	4.5	1.4
Th	0500	3.1	0.9	F	0629	2.4	0.7
	1115	5.2	1.6		1224	5.5	1.7
	1904	0.3	0.1		1928	-0.3	-0.1
11	0235	3.7	1.1	26	0219	4.8	1.5
F	0621	3.3	1.0	Sa	0800	2.2	0.7
	1204	4.7	1.4		1337	4.6	1.4
	1954	0.6	0.2		2020	0.4	0.1
12	0327	4.0	1.2	27	0318	5.2	1.6
Sa	0809	3.2	1.0	Su	0941	1.8	0.5
	1313	4.1	1.2		1510	3.9	1.2
	2038	0.9	0.3		2115	1.0	0.3
13	0406	4.3	1.3	28	0410	5.6	1.7
Su	0957	2.8	0.9	M	1106	1.0	0.3
	1447	3.6	1.1		1650	3.5	1.1
	2129	1.2	0.4		2211	1.5	0.5
14	0439	4.7	1.4	29	0458	5.9	1.8
M	1113	2.1	0.6	Tu	1212	0.3	0.1
	1626	3.4	1.0		1818	3.5	1.1
	2215	1.5	0.5		2306	1.9	0.6
15	0508	5.2	1.6	30	0543	6.2	1.9
Tu	1204	1.3	0.4	W	1305	-0.3	-0.1
	1745	3.4	1.0		1928	3.6	1.1
	2257	1.7	0.5		2359	2.2	0.7
				31	0625	6.4	2.0
				Th	1350	-0.7	-0.2
					2019	3.8	1.2

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0303	2.1	0.6	16	0305	2.3	0.7
Th	0921	7.1	2.2	F	0916	5.9	1.8
	1643	-1.7	-0.5		1631	-0.6	-0.2
	2319	4.2	1.3		2307	3.8	1.2
2	0359	2.1	0.6	17	0340	2.3	0.7
F	1010	6.7	2.0	Sa	0948	5.7	1.7
	1727	-1.3	-0.4		1701	-0.4	-0.1
					2336	3.9	1.2
3	0010	4.3	1.3	18	0419	2.3	0.7
Sa	0459	2.2	0.7	Su	1020	5.3	1.6
	1102	6.0	1.8		1725	-0.1	0.0
	1812	-0.8	-0.2				
4	0057	4.4	1.3	19	0003	4.0	1.2
Su	0612	2.2	0.7	M	0509	2.3	0.7
	1155	5.1	1.6		1056	4.8	1.5
	1855	-0.1	0.0		1752	0.3	0.1
5	0149	4.6	1.4	20	0039	4.2	1.3
M	0730	2.2	0.7	Tu	0608	2.2	0.7
	1301	4.2	1.3		1141	4.1	1.2
	1943	0.6	0.2		1823	0.8	0.2
6	0242	4.8	1.5	21	0115	4.4	1.3
Tu	0907	1.9	0.6	W	0724	2.1	0.6
	1428	3.5	1.1		1243	3.4	1.0
	2029	1.2	0.4		1855	1.3	0.4
7	0333	5.0	1.5	22	0200	4.6	1.4
W	1039	1.4	0.4	Th	0907	1.7	0.5
	1620	3.0	0.9		1429	2.8	0.9
	2122	1.8	0.5		1937	1.9	0.6
8	0423	5.2	1.6	23	0257	4.9	1.5
Th	1156	0.8	0.2	F	1042	1.0	0.3
	1806	3.0	0.9		1658	2.7	0.8
	2220	2.2	0.7		2036	2.3	0.7
9	0511	5.4	1.6	24	0357	5.3	1.6
F	1245	0.3	0.1	Sa	1152	0.2	0.1
	1921	3.2	1.0		1841	3.0	0.9
	2313	2.5	0.8		2207	2.6	0.8
10	0551	5.5	1.7	25	0500	5.8	1.8
Sa	1327	-0.1	0.0	Su	1246	-0.6	-0.2
	2013	3.3	1.0		1936	3.4	1.0
					2326	2.6	0.8
11	0004	2.6	0.8	26	0556	6.3	1.9
Su	0631	5.7	1.7	M	1333	-1.2	-0.4
	1405	-0.4	-0.1		2016	3.7	1.1
	2048	3.5	1.1				
12	0046	2.6	0.8	27	0027	2.4	0.7
M	0708	5.9	1.8	Tu	0651	6.8	2.1
	1434	-0.6	-0.2		1415	-1.7	-0.5
	2117	3.5	1.1		2054	4.0	1.2
13	0121	2.6	0.8	28	0123	2.0	0.6
Tu	0740	6.0	1.8	W	0742	7.0	2.1
	1506	-0.7	-0.2		1457	-1.9	-0.6
	2145	3.6	1.1		2130	4.2	1.3
14	0157	2.5	0.8	29	0216	1.7	0.5
W	0812	6.1	1.9	Th	0828	7.1	2.2
	1537	-0.7	-0.2		1537	-1.8	-0.5
	2214	3.6	1.1		2205	4.4	1.3
15	0229	2.4	0.7	30	0306	1.5	0.5
Th	0844	6.0	1.8	F	0913	6.9	2.1
	1603	-0.7	-0.2		1616	-1.5	-0.5
	2239	3.7	1.1		2240	4.6	1.4
				31	0355	1.3	0.4
				Sa	1001	6.3	1.9
					1651	-1.0	-0.3
					2319	4.8	1.5

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0448	1.3	0.4	16	0414	1.4	0.4
Su	1047	5.6	1.7	M	1011	5.0	1.5
	1727	-0.4	-0.1		1640	0.2	0.1
	2357	4.8	1.5		2302	4.6	1.4
2	0546	1.4	0.4	17	0454	1.3	0.4
M	1136	4.7	1.4	Tu	1050	4.4	1.3
	1802	0.4	0.1		1703	0.7	0.2
					2330	4.7	1.4
3	0037	4.8	1.5	18	0549	1.2	0.4
Tu	0652	1.5	0.5	W	1136	3.7	1.1
	1233	3.8	1.2		1727	1.2	0.4
	1834	1.1	0.3				
4	0122	4.8	1.5	19	0005	4.8	1.5
W	0818	1.5	0.5	Th	0655	1.2	0.4
	1354	3.0	0.9		1241	3.0	0.9
	1906	1.8	0.5		1749	1.7	0.5
5	0215	4.7	1.4	20	0048	4.9	1.5
Th	1007	1.2	0.4	F	0834	1.0	0.3
	1627	2.6	0.8		1452	2.5	0.8
	1947	2.4	0.7		1816	2.3	0.7
6	0319	4.7	1.4	21	0155	4.9	1.5
F	1132	0.8	0.2	Sa	1024	0.5	0.2
	1857	2.9	0.9				
	2120	2.8	0.9				
7	0428	4.8	1.5	22	0322	5.1	1.6
Sa	1232	0.3	0.1	Su	1140	-0.1	0.0
	1949	3.2	1.0		1902	3.2	1.0
	2303	2.9	0.9		2210	2.9	0.9
8	0529	5.0	1.5	23	0446	5.5	1.7
Su	1315	-0.1	0.0	M	1235	-0.8	-0.2
	2016	3.4	1.0		1932	3.6	1.1
					2340	2.6	0.8
9	0006	2.8	0.9	24	0553	6.0	1.8
M	0615	5.3	1.6	Tu	1320	-1.2	-0.4
	1347	-0.4	-0.1		1957	3.9	1.2
	2038	3.6	1.1				
10	0049	2.6	0.8	25	0038	2.1	0.6
Tu	0656	5.5	1.7	W	0646	6.4	2.0
	1417	-0.6	-0.2		1358	-1.5	-0.5
	2055	3.7	1.1		2029	4.3	1.3
11	0123	2.3	0.7	26	0128	1.5	0.5
W	0729	5.8	1.8	Th	0736	6.6	2.0
	1445	-0.7	-0.2		1433	-1.5	-0.5
	2113	3.8	1.2		2057	4.6	1.4
12	0157	2.1	0.6	27	0215	1.0	0.3
Th	0801	5.9	1.8	F	0822	6.5	2.0
	1507	-0.7	-0.2		1509	-1.3	-0.4
	2131	4.0	1.2		2126	4.9	1.5
13	0226	1.8	0.5	28	0301	0.7	0.2
F	0833	5.9	1.8	Sa	0907	6.2	1.9
	1532	-0.7	-0.2		1541	-0.9	-0.3
	2153	4.1	1.2		2157	5.1	1.6
14	0301	1.6	0.5				
Sa	0904	5.7	1.7				
	1553	-0.5	-0.2				
	2215	4.3	1.3				
15	0336	1.5	0.5				
Su	0936	5.4	1.6				
	1619	-0.2	-0.1				
	2237	4.4	1.3				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0345	0.5	0.2	16	0323	0.5	0.2
Su	0949	5.6	1.7	M	0925	4.9	1.5
	1609	-0.4	-0.1		1534	0.3	0.1
	2227	5.2	1.6		2147	5.1	1.6
2	0432	0.4	0.1	17	0403	0.3	0.1
M	1031	4.9	1.5	Tu	1006	4.5	1.4
	1640	0.3	0.1		1555	0.7	0.2
	2259	5.2	1.6		2213	5.3	1.6
3	0520	0.5	0.2	18	0445	0.2	0.1
Tu	1118	4.1	1.2	W	1051	3.9	1.2
	1705	1.0	0.3		1620	1.2	0.4
	2331	5.1	1.6		2243	5.3	1.6
4	0613	0.7	0.2	19	0539	0.2	0.1
W	1213	3.3	1.0	Th	1147	3.3	1.0
	1727	1.6	0.5		1641	1.7	0.5
					2320	5.3	1.6
5	0003	4.9	1.5	20	0648	0.3	0.1
Th	0725	0.9	0.3	F	1318	2.7	0.8
	1340	2.7	0.8		1706	2.2	0.7
	1739	2.2	0.7				
6	0048	4.6	1.4	21	0008	5.1	1.6
F	0912	1.0	0.3	Sa	0821	0.3	0.1
7	0156	4.3	1.3	22	0125	4.9	1.5
Sa	1057	0.8	0.2	Su	1002	0.0	0.0
8	0337	4.3	1.3	23	0309	4.9	1.5
Su	1201	0.4	0.1	M	1119	-0.4	-0.1
	1937	3.4	1.0		1838	3.5	1.1
	2308	3.0	0.9		2239	2.8	0.9
9	0500	4.5	1.4	24	0441	5.1	1.6
M	1244	0.0	0.0	Tu	1209	-0.7	-0.2
	1949	3.6	1.1		1900	4.0	1.2
					2350	2.2	0.7
10	0004	2.7	0.8	25	0545	5.5	1.7
Tu	0556	4.8	1.5	W	1251	-1.0	-0.3
	1315	-0.2	-0.1		1925	4.4	1.3
	1957	3.7	1.1				
11	0043	2.3	0.7	26	0043	1.5	0.5
W	0634	5.1	1.6	Th	0642	5.7	1.7
	1342	-0.4	-0.1		1328	-1.0	-0.3
	2012	3.9	1.2		1950	4.8	1.5
12	0112	1.9	0.6	27	0128	0.8	0.2
Th	0713	5.4	1.6	F	0728	5.7	1.7
	1406	-0.5	-0.2		1400	-0.8	-0.2
	2027	4.1	1.2		2018	5.1	1.6
13	0144	1.5	0.5	28	0210	0.3	0.1
F	0745	5.5	1.7	Sa	0813	5.5	1.7
	1428	-0.4	-0.1		1432	-0.4	-0.1
	2045	4.4	1.3		2045	5.4	1.6
14	0216	1.1	0.3	29	0252	-0.1	0.0
Sa	0817	5.4	1.6	Su	0857	5.2	1.6
	1450	-0.3	-0.1		1459	0.0	0.0
	2103	4.7	1.4		2112	5.6	1.7
15	0248	0.8	0.2	30	0331	-0.3	-0.1
Su	0853	5.3	1.6	M	0939	4.7	1.4
	1512	-0.1	0.0		1526	0.5	0.2
	2125	4.9	1.5		2138	5.6	1.7
				31	0413	-0.3	-0.1
				Tu	1023	4.1	1.2
					1551	1.1	0.3
					2206	5.5	1.7

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0457	-0.1	0.0	16	0443	-0.7	-0.2
W	1110	3.6	1.1	Th	1105	3.5	1.1
	1613	1.6	0.5		1547	1.8	0.5
	2233	5.3	1.6		2211	5.8	1.8
2	0547	0.1	0.0	17	0539	-0.6	-0.2
Th	1209	3.0	0.9	F	1218	3.1	0.9
	1624	2.1	0.6		1619	2.3	0.7
	2304	5.0	1.5		2253	5.6	1.7
3	0645	0.5	0.2	18	0648	-0.4	-0.1
F	1354	2.7	0.8	Sa	1407	2.9	0.9
	1622	2.5	0.8		1654	2.7	0.8
	2339	4.6	1.4		2352	5.3	1.6
4	0812	0.7	0.2	19	0810	-0.3	-0.1
Sa				Su	1618	3.1	0.9
					1827	3.0	0.9
5	0039	4.2	1.3	20	0117	4.9	1.5
Su	0955	0.6	0.2	M	0933	-0.4	-0.1
					1713	3.6	1.1
					2111	3.0	0.9
6	0231	4.0	1.2	21	0257	4.7	1.4
M	1103	0.4	0.1	Tu	1041	-0.4	-0.1
	1851	3.5	1.1		1745	4.0	1.2
	2253	3.0	0.9		2249	2.4	0.7
7	0415	4.1	1.2	22	0426	4.7	1.4
Tu	1150	0.2	0.1	W	1132	-0.5	-0.2
	1900	3.7	1.1		1817	4.5	1.4
	2343	2.6	0.8		2349	1.6	0.5
8	0516	4.3	1.3	23	0535	4.8	1.5
W	1222	0.1	0.0	Th	1214	-0.4	-0.1
	1908	3.9	1.2		1845	4.9	1.5
9	0019	2.0	0.6	24	0041	0.9	0.3
Th	0605	4.6	1.4	F	0630	4.8	1.5
	1251	0.0	0.0		1249	-0.1	0.0
	1919	4.2	1.3		1911	5.3	1.6
10	0054	1.5	0.5	25	0123	0.3	0.1
F	0644	4.7	1.4	Sa	0723	4.7	1.4
	1315	0.0	0.0		1321	0.2	0.1
	1934	4.6	1.4		1938	5.6	1.7
11	0127	0.9	0.3	26	0205	-0.2	-0.1
Sa	0723	4.8	1.5	Su	0809	4.5	1.4
	1338	0.1	0.0		1350	0.6	0.2
	1953	4.9	1.5		2004	5.8	1.8
12	0158	0.4	0.1	27	0243	-0.6	-0.2
Su	0801	4.7	1.4	M	0855	4.2	1.3
	1403	0.3	0.1		1418	1.0	0.3
	2014	5.3	1.6		2032	5.9	1.8
13	0233	-0.1	0.0	28	0322	-0.7	-0.2
M	0840	4.6	1.4	Tu	0938	3.9	1.2
	1425	0.6	0.2		1443	1.5	0.5
	2037	5.6	1.7		2057	5.9	1.8
14	0312	-0.4	-0.1	29	0401	-0.7	-0.2
Tu	0923	4.3	1.3	W	1024	3.6	1.1
	1451	1.0	0.3		1505	1.8	0.5
	2103	5.8	1.8		2122	5.7	1.7
15	0353	-0.7	-0.2	30	0440	-0.5	-0.2
W	1009	3.9	1.2	Th	1115	3.2	1.0
	1519	1.4	0.4		1530	2.2	0.7
	2135	5.9	1.8		2153	5.4	1.6

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0525	-0.2	-0.1	16	0536	-1.2	-0.4
F	1218	3.0	0.9	Sa	1236	3.3	1.0
	1545	2.5	0.8		1621	2.6	0.8
	2225	5.1	1.6		2248	5.9	1.8
2	0621	0.1	0.0	17	0639	-1.0	-0.3
Sa	2301	4.7	1.4	Su	1401	3.4	1.0
					1733	2.9	0.9
					2352	5.4	1.6
3	0730	0.3	0.1	18	0746	-0.7	-0.2
Su	2355	4.3	1.3	M	1515	3.7	1.1
					1919	2.9	0.9
4	0840	0.4	0.1	19	0111	4.9	1.5
M				Tu	0853	-0.5	-0.2
					1610	4.1	1.2
					2111	2.6	0.8
5	0121	4.0	1.2	20	0241	4.5	1.4
Tu	0947	0.5	0.2	W	0951	-0.2	-0.1
	1740	3.6	1.1		1652	4.5	1.4
	2205	3.0	0.9		2241	2.0	0.6
6	0301	3.8	1.2	21	0407	4.2	1.3
W	1036	0.5	0.2	Th	1039	0.1	0.0
	1750	3.9	1.2		1728	5.0	1.5
	2308	2.5	0.8		2342	1.2	0.4
7	0421	3.8	1.2	22	0524	4.0	1.2
Th	1113	0.5	0.2	F	1126	0.5	0.2
	1804	4.2	1.3		1801	5.4	1.6
	2353	1.9	0.6				
8	0521	3.9	1.2	23	0035	0.5	0.2
F	1145	0.6	0.2	Sa	0627	3.9	1.2
	1819	4.6	1.4		1203	0.9	0.3
					1831	5.7	1.7
9	0029	1.2	0.4	24	0118	-0.1	0.0
Sa	0615	4.0	1.2	Su	0723	3.8	1.2
	1214	0.7	0.2		1235	1.3	0.4
	1838	5.0	1.5		1900	5.9	1.8
10	0104	0.5	0.2	25	0200	-0.5	-0.2
Su	0702	4.0	1.2	M	0813	3.7	1.1
	1242	0.9	0.3		1311	1.6	0.5
	1902	5.5	1.7		1929	6.0	1.8
11	0143	-0.1	0.0	26	0238	-0.7	-0.2
M	0750	4.0	1.2	Tu	0902	3.6	1.1
	1312	1.1	0.3		1339	1.9	0.6
	1927	5.9	1.8		1957	6.1	1.9
12	0221	-0.7	-0.2	27	0316	-0.8	-0.2
Tu	0836	4.0	1.2	W	0945	3.5	1.1
	1342	1.4	0.4		1408	2.2	0.7
	1958	6.2	1.9		2026	6.0	1.8
13	0303	-1.1	-0.3	28	0352	-0.8	-0.2
W	0929	3.8	1.2	Th	1032	3.4	1.0
	1415	1.7	0.5		1436	2.4	0.7
	2032	6.4	2.0		2055	5.8	1.8
14	0349	-1.3	-0.4	29	0430	-0.6	-0.2
Th	1022	3.6	1.1	F	1124	3.2	1.0
	1453	2.0	0.6		1505	2.6	0.8
	2112	6.4	2.0		2130	5.6	1.7
15	0440	-1.4	-0.4	30	0510	-0.4	-0.1
F	1123	3.4	1.0	Sa	1216	3.2	1.0
	1532	2.3	0.7		1533	2.8	0.9
	2157	6.3	1.9		2206	5.4	1.6
				31	0555	-0.2	-0.1
				Su	1321	3.2	1.0
					1612	3.0	0.9
					2241	5.0	1.5

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0645	0.0	0.0	16	0711	-0.7	-0.2
M	1431	3.3	1.0	Tu	1415	4.3	1.3
	1715	3.1	0.9		1919	2.5	0.8
	2328	4.6	1.4				
2	0734	0.3	0.1	17	0057	4.9	1.5
Tu	1530	3.5	1.1	W	0804	-0.2	-0.1
	1853	3.2	1.0		1508	4.6	1.4
					2053	2.2	0.7
3	0025	4.2	1.3	18	0219	4.2	1.3
W	0823	0.5	0.2	Th	0855	0.4	0.1
	1602	3.8	1.2		1556	5.0	1.5
	2049	3.0	0.9		2221	1.6	0.5
4	0145	3.8	1.2	19	0351	3.6	1.1
Th	0906	0.7	0.2	F	0947	1.0	0.3
	1626	4.1	1.2		1638	5.3	1.6
	2219	2.5	0.8		2331	1.0	0.3
5	0315	3.5	1.1	20	0517	3.4	1.0
F	0951	1.0	0.3	Sa	1036	1.5	0.5
	1649	4.5	1.4		1721	5.6	1.7
	2317	1.8	0.5				
6	0437	3.4	1.0	21	0027	0.4	0.1
Sa	1029	1.2	0.4	Su	0635	3.3	1.0
	1716	5.0	1.5		1119	1.9	0.6
					1756	5.8	1.8
7	0003	1.0	0.3	22	0115	-0.1	0.0
Su	0549	3.4	1.0	M	0737	3.4	1.0
	1108	1.5	0.5		1201	2.2	0.7
	1742	5.4	1.6		1833	6.0	1.8
8	0048	0.3	0.1	23	0157	-0.4	-0.1
M	0652	3.5	1.1	Tu	0830	3.4	1.0
	1146	1.7	0.5		1239	2.4	0.7
	1817	5.9	1.8		1904	6.1	1.9
9	0131	-0.5	-0.2	24	0233	-0.6	-0.2
Tu	0747	3.6	1.1	W	0915	3.5	1.1
	1228	1.9	0.6		1315	2.5	0.8
	1852	6.4	2.0		1937	6.1	1.9
10	0213	-1.1	-0.3	25	0311	-0.7	-0.2
W	0840	3.7	1.1	Th	0953	3.5	1.1
	1310	2.1	0.6		1349	2.6	0.8
	1932	6.7	2.0		2011	6.1	1.9
11	0258	-1.5	-0.5	26	0343	-0.7	-0.2
Th	0934	3.7	1.1	F	1030	3.5	1.1
	1352	2.2	0.7		1424	2.6	0.8
	2018	6.9	2.1		2044	6.0	1.8
12	0347	-1.7	-0.5	27	0417	-0.6	-0.2
F	1030	3.7	1.1	Sa	1107	3.5	1.1
	1441	2.3	0.7		1500	2.7	0.8
	2103	6.9	2.1		2118	5.9	1.8
13	0436	-1.7	-0.5	28	0451	-0.5	-0.2
Sa	1122	3.8	1.2	Su	1144	3.5	1.1
	1533	2.4	0.7		1537	2.7	0.8
	2153	6.7	2.0		2151	5.6	1.7
14	0528	-1.5	-0.5	29	0525	-0.3	-0.1
Su	1221	3.8	1.2	M	1221	3.6	1.1
	1633	2.5	0.8		1622	2.8	0.9
	2248	6.2	1.9		2229	5.3	1.6
15	0620	-1.2	-0.4	30	0600	0.0	0.0
M	1316	4.0	1.2	Tu	1258	3.7	1.1
	1748	2.6	0.8		1713	2.9	0.9
	2347	5.6	1.7		2304	4.9	1.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0634	0.3	0.1	16	0037	4.6	1.4
W	1336	3.9	1.2	Th	0713	0.5	0.2
	1823	2.9	0.9		1401	5.0	1.5
	2354	4.4	1.3		2023	1.8	0.5
2	0706	0.7	0.2	17	0154	3.8	1.2
Th	1415	4.1	1.2	F	0755	1.2	0.4
	1943	2.7	0.8		1453	5.2	1.6
					2157	1.4	0.4
3	0050	3.8	1.2	18	0336	3.2	1.0
F	0741	1.1	0.3	Sa	0847	1.9	0.6
	1453	4.4	1.3		1547	5.4	1.6
	2119	2.3	0.7		2316	0.9	0.3
4	0218	3.3	1.0	19	0532	3.1	0.9
Sa	0821	1.5	0.5	Su	0946	2.4	0.7
	1532	4.8	1.5		1639	5.5	1.7
	2239	1.7	0.5				
5	0404	3.0	0.9	20	0020	0.4	0.1
Su	0909	1.9	0.6	M	0700	3.3	1.0
	1614	5.2	1.6		1049	2.7	0.8
	2341	0.9	0.3		1729	5.7	1.7
6	0545	3.0	0.9	21	0110	0.0	0.0
M	1005	2.2	0.7	Tu	0800	3.5	1.1
	1657	5.7	1.7		1145	2.8	0.9
					1812	5.8	1.8
7	0030	0.1	0.0	22	0149	-0.3	-0.1
Tu	0659	3.2	1.0	W	0839	3.6	1.1
	1100	2.4	0.7		1236	2.8	0.9
	1743	6.2	1.9		1854	6.0	1.8
8	0119	-0.6	-0.2	23	0224	-0.4	-0.1
W	0754	3.5	1.1	Th	0907	3.7	1.1
	1159	2.5	0.8		1312	2.7	0.8
	1832	6.7	2.0		1927	6.1	1.9
9	0204	-1.2	-0.4	24	0255	-0.5	-0.2
Th	0843	3.7	1.1	F	0936	3.8	1.2
	1256	2.4	0.7		1350	2.6	0.8
	1920	7.0	2.1		2003	6.1	1.9
10	0251	-1.6	-0.5	25	0325	-0.5	-0.2
F	0929	3.9	1.2	Sa	1001	3.9	1.2
	1347	2.3	0.7		1423	2.5	0.8
	2009	7.2	2.2		2034	6.1	1.9
11	0334	-1.7	-0.5	26	0353	-0.5	-0.2
Sa	1011	4.1	1.2	Su	1026	3.9	1.2
	1441	2.2	0.7		1458	2.4	0.7
	2058	7.2	2.2		2106	6.0	1.8
12	0419	-1.7	-0.5	27	0419	-0.3	-0.1
Su	1055	4.3	1.3	M	1051	4.0	1.2
	1539	2.1	0.6		1534	2.4	0.7
	2150	6.9	2.1		2138	5.8	1.8
13	0503	-1.4	-0.4	28	0446	-0.1	0.0
M	1141	4.5	1.4	Tu	1116	4.2	1.3
	1635	2.0	0.6		1613	2.4	0.7
	2240	6.3	1.9		2211	5.4	1.6
14	0546	-0.9	-0.3	29	0510	0.2	0.1
Tu	1224	4.7	1.4	W	1144	4.3	1.3
	1741	2.0	0.6		1656	2.3	0.7
	2335	5.5	1.7		2246	4.9	1.5
15	0631	-0.2	-0.1	30	0533	0.6	0.2
W	1312	4.9	1.5	Th	1213	4.4	1.3
	1854	2.0	0.6		1751	2.3	0.7
					2327	4.3	1.3
				31	0600	1.1	0.3
				F	1245	4.6	1.4
					1901	2.2	0.7

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0023	3.7	1.1	16	0353	3.1	0.9
Sa	0626	1.6	0.5	Su	0734	2.7	0.8
	1326	4.8	1.5		1448	5.1	1.6
	2027	2.0	0.6		2257	0.9	0.3
2	0147	3.1	0.9	17	0623	3.3	1.0
Su	0700	2.1	0.6	M	0900	3.1	0.9
	1416	5.0	1.5		1602	5.2	1.6
	2206	1.4	0.4				
3	0415	2.8	0.9	18	0006	0.5	0.2
M	0746	2.5	0.8	Tu	0723	3.6	1.1
	1519	5.3	1.6		1047	3.2	1.0
	2321	0.7	0.2		1709	5.3	1.6
4	0619	3.1	0.9	19	0051	0.2	0.1
Tu	0915	2.8	0.9	W	0755	3.8	1.2
	1626	5.8	1.8		1153	3.1	0.9
					1801	5.5	1.7
5	0021	0.0	0.0	20	0129	0.0	0.0
W	0714	3.4	1.0	Th	0820	4.0	1.2
	1049	2.9	0.9		1238	2.8	0.9
	1726	6.2	1.9		1843	5.8	1.8
6	0107	-0.7	-0.2	21	0159	-0.2	-0.1
Th	0753	3.8	1.2	F	0835	4.1	1.2
	1158	2.7	0.8		1315	2.6	0.8
	1823	6.7	2.0		1919	6.0	1.8
7	0152	-1.2	-0.4	22	0228	-0.3	-0.1
F	0830	4.1	1.2	Sa	0853	4.2	1.3
	1259	2.4	0.7		1347	2.3	0.7
	1915	7.1	2.2		1950	6.1	1.9
8	0234	-1.4	-0.4	23	0253	-0.2	-0.1
Sa	0903	4.4	1.3	Su	0915	4.3	1.3
	1349	2.0	0.6		1416	2.1	0.6
	2004	7.3	2.2		2022	6.0	1.8
9	0313	-1.5	-0.5	24	0315	-0.1	0.0
Su	0938	4.7	1.4	M	0933	4.5	1.4
	1441	1.7	0.5		1448	1.9	0.6
	2053	7.1	2.2		2051	5.9	1.8
10	0351	-1.2	-0.4	25	0337	0.1	0.0
M	1014	4.9	1.5	Tu	0955	4.7	1.4
	1532	1.4	0.4		1523	1.7	0.5
	2139	6.7	2.0		2123	5.6	1.7
11	0427	-0.8	-0.2	26	0358	0.3	0.1
Tu	1051	5.2	1.6	W	1017	4.8	1.5
	1624	1.3	0.4		1558	1.6	0.5
	2227	6.0	1.8		2155	5.2	1.6
12	0504	-0.1	0.0	27	0417	0.7	0.2
W	1128	5.3	1.6	Th	1040	5.0	1.5
	1723	1.3	0.4		1637	1.5	0.5
	2319	5.2	1.6		2233	4.7	1.4
13	0538	0.6	0.2	28	0440	1.2	0.4
Th	1209	5.4	1.6	F	1104	5.1	1.6
	1827	1.3	0.4		1726	1.5	0.5
					2315	4.1	1.2
14	0018	4.2	1.3	29	0501	1.7	0.5
F	0610	1.4	0.4	Sa	1136	5.1	1.6
	1252	5.3	1.6		1824	1.5	0.5
	1945	1.4	0.4				
15	0137	3.5	1.1	30	0016	3.4	1.0
Sa	0649	2.1	0.6	Su	0522	2.2	0.7
	1345	5.2	1.6		1216	5.2	1.6
	2123	1.3	0.4		1954	1.4	0.4
				31	0211	2.9	0.9
				M	0541	2.6	0.8
					1310	5.2	1.6
					2141	1.1	0.3

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1440	5.3	1.6	16	0704	3.9	1.2
Tu	2305	0.5	0.2	W	1101	3.4	1.0
					1644	4.9	1.5
2	0644	3.5	1.1	17	0019	0.4	0.1
W	0927	3.3	1.0	Th	0719	4.1	1.2
	1610	5.6	1.7		1156	3.0	0.9
					1740	5.2	1.6
3	0006	-0.1	0.0	18	0056	0.2	0.1
Th	0705	3.9	1.2	F	0734	4.3	1.3
	1107	3.0	0.9		1230	2.6	0.8
	1719	6.1	1.9		1822	5.4	1.6
4	0051	-0.6	-0.2	19	0121	0.1	0.0
F	0730	4.2	1.3	Sa	0752	4.5	1.4
	1211	2.5	0.8		1302	2.2	0.7
	1819	6.5	2.0		1900	5.6	1.7
5	0130	-0.9	-0.3	20	0146	0.1	0.0
Sa	0759	4.6	1.4	Su	0807	4.7	1.4
	1302	1.9	0.6		1334	1.8	0.5
	1910	6.8	2.1		1932	5.6	1.7
6	0206	-1.0	-0.3	21	0208	0.2	0.1
Su	0827	5.0	1.5	M	0825	4.9	1.5
	1349	1.3	0.4		1404	1.4	0.4
	1957	6.8	2.1		2004	5.6	1.7
7	0241	-0.8	-0.2	22	0230	0.3	0.1
M	0858	5.4	1.6	Tu	0841	5.1	1.6
	1436	0.9	0.3		1434	1.1	0.3
	2044	6.5	2.0		2036	5.4	1.6
8	0313	-0.5	-0.2	23	0251	0.6	0.2
Tu	0928	5.7	1.7	W	0902	5.4	1.6
	1522	0.6	0.2		1508	0.8	0.2
	2130	6.0	1.8		2112	5.1	1.6
9	0345	0.1	0.0	24	0310	0.9	0.3
W	1000	5.8	1.8	Th	0924	5.5	1.7
	1611	0.5	0.2		1542	0.7	0.2
	2217	5.3	1.6		2148	4.7	1.4
10	0417	0.7	0.2	25	0329	1.3	0.4
Th	1032	5.8	1.8	F	0945	5.7	1.7
	1701	0.5	0.2		1625	0.6	0.2
	2307	4.6	1.4		2230	4.2	1.3
11	0443	1.4	0.4	26	0353	1.8	0.5
F	1107	5.7	1.7	Sa	1014	5.7	1.7
	1759	0.7	0.2		1710	0.6	0.2
					2323	3.7	1.1
12	0003	3.8	1.2	27	0411	2.2	0.7
Sa	0514	2.1	0.6	Su	1046	5.6	1.7
	1143	5.5	1.7		1815	0.7	0.2
	1909	1.0	0.3				
13	0137	3.2	1.0	28	0047	3.2	1.0
Su	0536	2.7	0.8	M	0430	2.7	0.8
	1232	5.1	1.6		1131	5.5	1.7
	2045	1.1	0.3		1939	0.8	0.2
14	1343	4.8	1.5	29	1239	5.3	1.6
M	2223	0.9	0.3	Tu	2122	0.6	0.2
15	1521	4.7	1.4	30	1421	5.2	1.6
Tu	2332	0.7	0.2	W	2241	0.2	0.1

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

LOS ANGELES (Outer Harbor), CALIFORNIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m
1	0609	3.9	1.2
Th	1003	3.3	1.0
	1602	5.4	1.6
	2335	-0.2	-0.1
2	0633	4.3	1.3
F	1121	2.7	0.8
	1713	5.7	1.7
3	0020	-0.4	-0.1
Sa	0655	4.8	1.5
	1217	2.0	0.6
	1812	5.9	1.8
4	0056	-0.4	-0.1
Su	0720	5.2	1.6
	1302	1.2	0.4
	1902	6.0	1.8
5	0131	-0.3	-0.1
M	0748	5.7	1.7
	1346	0.6	0.2
	1950	5.9	1.8
6	0203	0.0	0.0
Tu	0817	6.0	1.8
	1429	0.1	0.0
	2035	5.6	1.7
7	0234	0.5	0.2
W	0845	6.2	1.9
	1511	-0.2	-0.1
	2121	5.1	1.6
8	0301	1.0	0.3
Th	0914	6.3	1.9
	1557	-0.2	-0.1
	2206	4.6	1.4
9	0328	1.6	0.5
F	0943	6.2	1.9
	1642	-0.1	0.0
	2259	4.0	1.2
10	0353	2.1	0.6
Sa	1014	5.9	1.8
	1731	0.2	0.1
11	0003	3.5	1.1
Su	0415	2.6	0.8
	1047	5.5	1.7
	1837	0.6	0.2
12	0158	3.2	1.0
M	0416	3.1	0.9
	1128	5.1	1.6
	1956	0.8	0.2
13	1229	4.7	1.4
Tu	2130	0.9	0.3
14	0627	3.8	1.2
W	0844	3.7	1.1
	1418	4.4	1.3
	2239	0.7	0.2
15	0625	4.0	1.2
Th	1049	3.4	1.0
	1558	4.4	1.3
	2329	0.6	0.2
16	0633	4.3	1.3
F	1137	2.9	0.9
	1703	4.6	1.4
17	0004	0.5	0.2
Sa	0645	4.5	1.4
	1212	2.3	0.7
	1753	4.8	1.5
18	0030	0.5	0.2
Su	0700	4.8	1.5
	1245	1.8	0.5
	1831	4.9	1.5
19	0055	0.6	0.2
M	0715	5.1	1.6
	1317	1.3	0.4
	1910	4.9	1.5
20	0118	0.7	0.2
Tu	0733	5.4	1.6
	1348	0.8	0.2
	1948	4.9	1.5
21	0140	1.0	0.3
W	0752	5.7	1.7
	1421	0.3	0.1
	2024	4.7	1.4
22	0203	1.2	0.4
Th	0813	6.0	1.8
	1456	0.0	0.0
	2105	4.5	1.4
23	0227	1.5	0.5
F	0839	6.2	1.9
	1534	-0.2	-0.1
	2148	4.2	1.3
24	0249	1.9	0.6
Sa	0907	6.3	1.9
	1619	-0.3	-0.1
	2241	3.8	1.2
25	0317	2.3	0.7
Su	0943	6.2	1.9
	1709	-0.2	-0.1
	2351	3.4	1.0
26	0342	2.7	0.8
M	1021	6.0	1.8
	1813	-0.1	0.0
27	0130	3.2	1.0
Tu	0415	3.0	0.9
	1115	5.7	1.7
	1932	0.1	0.0
28	1227	5.3	1.6
W	2053	0.1	0.0
29	0450	3.9	1.2
Th	0819	3.5	1.1
	1409	5.0	1.5
	2203	0.0	0.0
30	0519	4.3	1.3
F	1015	2.9	0.9
	1545	4.9	1.5
	2256	0.0	0.0
31	0547	4.8	1.5
Sa	1122	2.1	0.6
	1701	5.0	1.5
	2342	0.1	0.0

NOVEMBER

Day	Time h m	Height ft	Height m
1	0615	5.3	1.6
Su	1215	1.3	0.4
	1804	5.0	1.5
2	0019	0.3	0.1
M	0644	5.8	1.8
	1300	0.6	0.2
	1859	4.9	1.5
3	0051	0.6	0.2
Tu	0712	6.2	1.9
	1342	-0.1	0.0
	1948	4.8	1.5
4	0123	1.0	0.3
W	0739	6.4	2.0
	1424	-0.5	-0.2
	2035	4.5	1.4
5	0152	1.4	0.4
Th	0808	6.5	2.0
	1505	-0.7	-0.2
	2121	4.2	1.3
6	0221	1.8	0.5
F	0837	6.5	2.0
	1546	-0.6	-0.2
	2210	3.9	1.2
7	0249	2.2	0.7
Sa	0908	6.3	1.9
	1627	-0.5	-0.2
	2304	3.6	1.1
8	0314	2.6	0.8
Su	0936	6.0	1.8
	1712	-0.2	-0.1
9	0010	3.4	1.0
M	0339	2.9	0.9
	1009	5.6	1.7
	1808	0.1	0.0
10	0148	3.3	1.0
Tu	0354	3.2	1.0
	1050	5.2	1.6
	1909	0.4	0.1
11	1139	4.7	1.4
W	2018	0.6	0.2
12	0507	3.7	1.1
Th	0734	3.6	1.1
	1258	4.3	1.3
	2124	0.7	0.2
13	0519	4.0	1.2
F	0956	3.3	1.0
	1441	4.0	1.2
	2215	0.8	0.2
14	0533	4.3	1.3
Sa	1105	2.8	0.9
	1607	4.0	1.2
	2255	0.9	0.3
15	0548	4.6	1.4
Su	1147	2.2	0.7
	1713	4.0	1.2
	2326	1.0	0.3
16	0606	5.0	1.5
M	1222	1.5	0.5
	1805	4.0	1.2
	2357	1.2	0.4
17	0622	5.4	1.6
Tu	1258	0.8	0.2
	1851	4.1	1.2
18	0022	1.4	0.4
W	0644	5.8	1.8
	1330	0.2	0.1
	1937	4.1	1.2
19	0051	1.6	0.5
Th	0710	6.1	1.9
	1408	-0.3	-0.1
	2021	4.0	1.2
20	0120	1.8	0.5
F	0739	6.4	2.0
	1447	-0.7	-0.2
	2109	4.0	1.2
21	0151	2.0	0.6
Sa	0811	6.6	2.0
	1529	-1.0	-0.3
	2158	3.8	1.2
22	0226	2.3	0.7
Su	0847	6.7	2.0
	1617	-1.0	-0.3
	2256	3.7	1.1
23	0302	2.5	0.8
M	0929	6.6	2.0
	1707	-1.0	-0.3
24	0003	3.5	1.1
Tu	0345	2.8	0.9
	1017	6.3	1.9
	1805	-0.8	-0.2
25	0119	3.6	1.1
W	0446	3.0	0.9
	1115	5.9	1.8
	1908	-0.5	-0.2
26	0235	3.8	1.2
Th	0624	3.2	1.0
	1224	5.3	1.6
	2012	-0.2	-0.1
27	0334	4.2	1.3
F	0823	3.0	0.9
	1351	4.7	1.4
	2111	0.1	0.0
28	0419	4.7	1.4
Sa	1001	2.4	0.7
	1527	4.3	1.3
	2208	0.4	0.1
29	0458	5.2	1.6
Su	1116	1.6	0.5
	1653	4.1	1.2
	2255	0.8	0.2
30	0534	5.6	1.7
M	1211	0.8	0.2
	1802	4.0	1.2
	2337	1.2	0.4

DECEMBER

Day	Time h m	Height ft	Height m
1	0606	6.0	1.8
Tu	1301	0.1	0.0
	1904	4.0	1.2
2	0015	1.5	0.5
W	0639	6.3	1.9
	1343	-0.4	-0.1
	1959	3.9	1.2
3	0047	1.8	0.5
Th	0711	6.5	2.0
	1422	-0.7	-0.2
	2049	3.8	1.2
4	0123	2.1	0.6
F	0743	6.5	2.0
	1501	-0.9	-0.3
	2133	3.8	1.2
5	0155	2.4	0.7
Sa	0813	6.4	2.0
	1539	-0.8	-0.2
	2217	3.6	1.1
6	0226	2.5	0.8
Su	0845	6.3	1.9
	1617	-0.7	-0.2
	2304	3.5	1.1
7	0255	2.7	0.8
M	0917	6.0	1.8
	1657	-0.5	-0.2
	2353	3.5	1.1
8	0330	2.9	0.9
Tu	0953	5.7	1.7
	1739	-0.2	-0.1
9	0048	3.4	1.0
W	0409	3.0	0.9
	1031	5.3	1.6
	1821	0.1	0.0
10	0151	3.5	1.1
Th	0506	3.2	1.0
	1110	4.9	1.5
	1908	0.4	0.1
11	0250	3.7	1.1
F	0630	3.3	1.0
	1203	4.4	1.3
	1956	0.7	0.2
12	0335	3.9	1.2
Sa	0825	3.2	1.0
	1315	3.8	1.2
	2042	1.0	0.3
13	0407	4.2	1.3
Su	1006	2.7	0.8
	1451	3.4	1.0
	2123	1.3	0.4
14	0436	4.6	1.4
M	1114	2.0	0.6
	1624	3.2	1.0
	2205	1.6	0.5
15	0500	5.0	1.5
Tu	1200	1.3	0.4
	1742	3.3	1.0
	2248	1.8	0.5
16	0532	5.4	1.6
W	1239	0.5	0.2
	1846	3.4	1.0
	2327	2.0	0.6
17	0600	5.9	1.8
Th	1320	-0.2	-0.1
	1939	3.5	1.1
18	0008	2.1	0.6
F	0636	6.3	1.9
	1400	-0.8	-0.2
	2029	3.7	1.1
19	0050	2.2	0.7
Sa	0715	6.7	2.0
	1442	-1.2	-0.4
	2116	3.7	1.1
20	0136	2.3	0.7
Su	0756	6.9	2.1
	1524	-1.5	-0.5
	2203	3.8	1.2
21	0218	2.3	0.7
M	0840	7.0	2.1
	1609	-1.6	-0.5
	2251	3.8	1.2
22	0308	2.4	0.7
Tu	0929	6.9	2.1
	1658	-1.5	-0.5
	2341	3.9	1.2
23	0403	2.4	0.7
W	1018	6.5	2.0
	1745	-1.2	-0.4
24	0036	4.0	1.2
Th	0507	2.5	0.8
	1113	5.9	1.8
	1834	-0.7	-0.2
25	0128	4.2	1.3
F	0626	2.5	0.8
	1213	5.1	1.6
	1925	-0.1	0.0
26	0224	4.6	1.4
Sa	0803	2.3	0.7
	1332	4.3	1.3
	2016	0.5	0.2
27	0316	4.9	1.5
Su	0941	1.8	0.5
	1504	3.6	1.1
	2109	1.1	0.3
28	0405	5.3	1.6
M	1101	1.1	0.3
	1649	3.3	1.0
	2205	1.6	0.5
29	0453	5.6	1.7
Tu	1207	0.4	0.1
	1819	3.3	1.0
	2255	2.0	0.6
30	0537	5.9	1.8
W	1259	-0.2	-0.1
	1927	3.4	1.0
	2345	2.3	0.7
31	0614	6.1	1.9
Th	1344	-0.6	-0.2
	2021	3.5	1.1

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0112	5.2	1.6	16	0121	4.7	1.4
Th	0525	3.2	1.0	F	0541	3.2	1.0
	1136	7.2	2.2		1134	6.0	1.8
	1830	-1.7	-0.5		1823	-0.5	-0.2
2	0155	5.3	1.6	17	0149	4.7	1.4
F	0624	3.0	0.9	Sa	0619	3.1	0.9
	1228	6.8	2.1		1209	5.7	1.7
	1916	-1.3	-0.4		1854	-0.3	-0.1
3	0240	5.4	1.6	18	0218	4.8	1.5
Sa	0724	2.8	0.9	Su	0659	2.9	0.9
	1321	6.2	1.9		1248	5.4	1.6
	2003	-0.8	-0.2		1926	0.0	0.0
4	0322	5.5	1.7	19	0246	4.9	1.5
Su	0833	2.6	0.8	M	0747	2.7	0.8
	1420	5.4	1.6		1328	4.9	1.5
	2049	-0.1	0.0		1959	0.4	0.1
5	0407	5.6	1.7	20	0315	5.1	1.6
M	0945	2.2	0.7	Tu	0843	2.4	0.7
	1529	4.7	1.4		1422	4.4	1.3
	2134	0.6	0.2		2032	0.9	0.3
6	0450	5.7	1.7	21	0347	5.4	1.6
Tu	1105	1.8	0.5	W	0948	2.0	0.6
	1648	4.0	1.2		1533	3.9	1.2
	2226	1.4	0.4		2114	1.6	0.5
7	0535	5.9	1.8	22	0425	5.6	1.7
W	1216	1.3	0.4	Th	1058	1.5	0.5
	1829	3.7	1.1		1711	3.6	1.1
	2320	2.1	0.6		2202	2.3	0.7
8	0618	6.0	1.8	23	0508	5.9	1.8
Th	1317	0.9	0.3	F	1207	0.9	0.3
	2007	3.8	1.2		1913	3.6	1.1
					2308	2.9	0.9
9	0017	2.7	0.8	24	0558	6.2	1.9
F	0701	6.1	1.9	Sa	1312	0.2	0.1
	1412	0.4	0.1		2049	4.0	1.2
	2125	4.1	1.2				
10	0120	3.1	0.9	25	0021	3.3	1.0
Sa	0744	6.2	1.9	Su	0654	6.5	2.0
	1458	0.1	0.0		1411	-0.4	-0.1
	2224	4.4	1.3		2149	4.5	1.4
11	0215	3.4	1.0	26	0133	3.5	1.1
Su	0826	6.2	1.9	M	0754	6.8	2.1
	1537	-0.1	0.0		1504	-1.0	-0.3
	2309	4.6	1.4		2241	4.8	1.5
12	0304	3.5	1.1	27	0236	3.4	1.0
M	0906	6.3	1.9	Tu	0851	7.1	2.2
	1614	-0.3	-0.1		1553	-1.4	-0.4
	2345	4.8	1.5		2326	5.0	1.5
13	0350	3.5	1.1	28	0332	3.1	0.9
Tu	0945	6.3	1.9	W	0946	7.2	2.2
	1650	-0.4	-0.1		1641	-1.6	-0.5
14	0024	4.8	1.5	29	0002	5.2	1.6
W	0428	3.4	1.0	Th	0427	2.8	0.9
	1024	6.3	1.9		1039	7.2	2.2
	1722	-0.5	-0.2		1727	-1.6	-0.5
15	0056	4.8	1.5	30	0040	5.3	1.6
Th	0505	3.4	1.0	F	0518	2.4	0.7
	1059	6.2	1.9		1131	6.9	2.1
	1753	-0.5	-0.2		1807	-1.3	-0.4
				31	0118	5.4	1.6
				Sa	0613	2.1	0.6
					1221	6.4	2.0
					1849	-0.9	-0.3

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0154	5.5	1.7	16	0121	5.0	1.5
Su	0707	1.8	0.5	M	0638	1.8	0.5
	1315	5.7	1.7		1244	5.1	1.6
	1928	-0.2	-0.1		1849	0.4	0.1
2	0232	5.6	1.7	17	0147	5.2	1.6
M	0807	1.6	0.5	Tu	0721	1.5	0.5
	1409	5.0	1.5		1330	4.6	1.4
	2008	0.5	0.2		1920	1.0	0.3
3	0310	5.7	1.7	18	0215	5.4	1.6
Tu	0907	1.5	0.5	W	0814	1.3	0.4
	1514	4.3	1.3		1427	4.2	1.3
	2049	1.4	0.4		1953	1.6	0.5
4	0347	5.7	1.7	19	0250	5.6	1.7
W	1016	1.3	0.4	Th	0910	1.0	0.3
	1638	3.8	1.2		1545	3.8	1.2
	2137	2.2	0.7		2034	2.3	0.7
5	0431	5.7	1.7	20	0331	5.8	1.8
Th	1128	1.1	0.3	F	1019	0.8	0.2
	1830	3.6	1.1		1732	3.7	1.1
	2236	2.8	0.9		2127	3.0	0.9
6	0517	5.7	1.7	21	0423	6.0	1.8
F	1238	0.9	0.3	Sa	1135	0.4	0.1
	2017	3.9	1.2		1927	3.9	1.2
	2349	3.3	1.0		2249	3.4	1.0
7	0611	5.7	1.7	22	0525	6.1	1.9
Sa	1339	0.6	0.2	Su	1246	0.0	0.0
	2122	4.2	1.3		2048	4.3	1.3
8	0104	3.5	1.1	23	0019	3.5	1.1
Su	0706	5.8	1.8	M	0634	6.3	1.9
	1429	0.4	0.1		1352	-0.5	-0.2
	2206	4.5	1.4		2133	4.6	1.4
9	0204	3.5	1.1	24	0134	3.3	1.0
M	0759	5.9	1.8	Tu	0743	6.5	2.0
	1514	0.1	0.0		1449	-0.9	-0.3
	2245	4.6	1.4		2215	4.9	1.5
10	0253	3.4	1.0	25	0236	2.9	0.9
Tu	0844	6.0	1.8	W	0843	6.6	2.0
	1553	-0.1	0.0		1538	-1.1	-0.3
	2316	4.7	1.4		2251	5.1	1.6
11	0337	3.1	0.9	26	0332	2.4	0.7
W	0927	6.0	1.8	Th	0942	6.6	2.0
	1625	-0.3	-0.1		1621	-1.2	-0.4
	2345	4.7	1.4		2326	5.2	1.6
12	0412	2.9	0.9	27	0422	1.8	0.5
Th	1008	6.0	1.8	F	1033	6.5	2.0
	1657	-0.4	-0.1		1703	-1.0	-0.3
13	0010	4.7	1.4	28	0001	5.4	1.6
F	0447	2.6	0.8	Sa	0511	1.3	0.4
	1047	5.9	1.8		1126	6.1	1.9
	1726	-0.4	-0.1		1741	-0.6	-0.2
14	0032	4.8	1.5				
Sa	0523	2.4	0.7				
	1122	5.7	1.7				
	1755	-0.3	-0.1				
15	0057	4.9	1.5				
Su	0558	2.1	0.6				
	1201	5.4	1.6				
	1823	0.0	0.0				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0033	5.5	1.7	16	0001	5.1	1.6
Su	0557	1.0	0.3	M	0539	0.8	0.2
	1218	5.6	1.7		1201	5.0	1.5
	1816	-0.1	0.0		1744	0.7	0.2
2	0105	5.6	1.7	17	0025	5.4	1.6
M	0647	0.7	0.2	Tu	0618	0.5	0.2
	1310	5.1	1.6		1247	4.7	1.4
	1852	0.6	0.2		1816	1.2	0.4
3	0137	5.6	1.7	18	0052	5.6	1.7
Tu	0735	0.6	0.2	W	0700	0.2	0.1
	1406	4.5	1.4		1344	4.4	1.3
	1930	1.4	0.4		1848	1.8	0.5
4	0210	5.6	1.7	19	0124	5.7	1.7
W	0827	0.7	0.2	Th	0748	0.1	0.0
	1510	4.1	1.2		1448	4.1	1.2
	2009	2.2	0.7		1924	2.4	0.7
5	0246	5.5	1.7	20	0203	5.8	1.8
Th	0927	0.8	0.2	F	0848	0.0	0.0
	1633	3.8	1.2		1611	4.0	1.2
	2053	2.8	0.9		2012	3.0	0.9
6	0325	5.4	1.6	21	0251	5.8	1.8
F	1035	0.8	0.2	Sa	0953	0.0	0.0
	1826	3.8	1.2		1753	4.0	1.2
	2200	3.3	1.0		2121	3.4	1.0
7	0416	5.3	1.6	22	0351	5.8	1.8
Sa	1145	0.8	0.2	Su	1109	-0.1	0.0
	2002	4.0	1.2		1920	4.2	1.3
	2333	3.6	1.1		2301	3.5	1.1
8	0518	5.2	1.6	23	0506	5.7	1.7
Su	1251	0.7	0.2	M	1222	-0.3	-0.1
	2057	4.3	1.3		2015	4.5	1.4
9	0053	3.5	1.1	24	0029	3.3	1.0
M	0624	5.2	1.6	Tu	0623	5.8	1.8
	1351	0.5	0.2		1328	-0.5	-0.2
	2133	4.4	1.3		2100	4.7	1.4
10	0151	3.3	1.0	25	0138	2.7	0.8
Tu	0727	5.3	1.6	W	0735	5.8	1.8
	1436	0.2	0.1		1424	-0.6	-0.2
	2202	4.5	1.4		2136	5.0	1.5
11	0236	2.9	0.9	26	0236	2.0	0.6
W	0822	5.4	1.6	Th	0841	5.8	1.8
	1515	0.0	0.0		1510	-0.6	-0.2
	2230	4.6	1.4		2211	5.2	1.6
12	0316	2.5	0.8	27	0326	1.3	0.4
Th	0907	5.5	1.7	F	0940	5.7	1.7
	1550	-0.1	0.0		1551	-0.5	-0.2
	2252	4.7	1.4		2243	5.4	1.6
13	0352	2.1	0.6	28	0415	0.7	0.2
F	0953	5.4	1.6	Sa	1035	5.5	1.7
	1619	-0.2	-0.1		1630	-0.1	0.0
	2314	4.8	1.5		2315	5.5	1.7
14	0427	1.7	0.5	29	0500	0.2	0.1
Sa	1035	5.3	1.6	Su	1127	5.2	1.6
	1648	0.0	0.0		1705	0.4	0.1
	2338	4.9	1.5		2346	5.6	1.7
15	0502	1.2	0.4	30	0542	-0.1	0.0
Su	1115	5.2	1.6	M	1220	4.9	1.5
	1717	0.2	0.1		1744	1.0	0.3
				31	0014	5.7	1.7
				Tu	0624	-0.2	-0.1
					1313	4.6	1.4
					1819	1.7	0.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0043	5.6	1.7	16	0007	6.0	1.8
W	0706	-0.2	-0.1	Th	0644	-0.9	-0.3
	1411	4.3	1.3		1401	4.4	1.3
	1855	2.3	0.7		1823	2.6	0.8
2	0115	5.5	1.7	17	0046	6.0	1.8
Th	0752	0.0	0.0	F	0733	-0.9	-0.3
	1515	4.1	1.2		1509	4.3	1.3
	1937	2.9	0.9		1911	3.1	0.9
3	0146	5.4	1.6	18	0132	6.0	1.8
F	0841	0.2	0.1	Sa	0831	-0.8	-0.2
	1631	4.0	1.2		1622	4.3	1.3
	2029	3.3	1.0		2014	3.4	1.0
4	0230	5.2	1.6	19	0229	5.8	1.8
Sa	0939	0.5	0.2	Su	0937	-0.6	-0.2
	1804	4.0	1.2		1740	4.4	1.3
	2145	3.6	1.1		2138	3.5	1.1
5	0323	5.0	1.5	20	0335	5.6	1.7
Su	1048	0.6	0.2	M	1047	-0.5	-0.2
	1920	4.1	1.2		1843	4.5	1.4
	2316	3.6	1.1		2312	3.2	1.0
6	0429	4.8	1.5	21	0454	5.3	1.6
M	1155	0.6	0.2	Tu	1155	-0.4	-0.1
	2009	4.3	1.3		1935	4.8	1.5
7	0033	3.3	1.0	22	0033	2.6	0.8
Tu	0541	4.7	1.4	W	0613	5.1	1.6
	1256	0.5	0.2		1257	-0.3	-0.1
	2041	4.4	1.3		2015	5.0	1.5
8	0127	2.9	0.9	23	0136	1.9	0.6
W	0647	4.7	1.4	Th	0730	4.9	1.5
	1344	0.3	0.1		1346	-0.1	0.0
	2105	4.5	1.4		2054	5.3	1.6
9	0213	2.4	0.7	24	0232	1.1	0.3
Th	0750	4.7	1.4	F	0839	4.8	1.5
	1423	0.2	0.1		1434	0.1	0.0
	2131	4.6	1.4		2127	5.5	1.7
10	0252	1.8	0.5	25	0321	0.4	0.1
F	0845	4.7	1.4	Sa	0942	4.7	1.4
	1459	0.3	0.1		1513	0.5	0.2
	2153	4.8	1.5		2159	5.7	1.7
11	0328	1.2	0.4	26	0406	-0.2	-0.1
Sa	0937	4.7	1.4	Su	1040	4.6	1.4
	1531	0.4	0.1		1554	1.0	0.3
	2217	5.0	1.5		2229	5.8	1.8
12	0403	0.6	0.2	27	0445	-0.6	-0.2
Su	1026	4.7	1.4	M	1134	4.5	1.4
	1603	0.7	0.2		1633	1.5	0.5
	2241	5.3	1.6		2259	5.8	1.8
13	0441	0.1	0.0	28	0526	-0.8	-0.2
M	1114	4.6	1.4	Tu	1228	4.5	1.4
	1636	1.1	0.3		1712	2.1	0.6
	2305	5.6	1.7		2327	5.8	1.8
14	0517	-0.4	-0.1	29	0605	-0.8	-0.2
Tu	1205	4.6	1.4	W	1324	4.4	1.3
	1709	1.6	0.5		1750	2.6	0.8
	2335	5.8	1.8		2356	5.7	1.7
15	0559	-0.7	-0.2	30	0641	-0.7	-0.2
W	1302	4.5	1.4	Th	1417	4.3	1.3
	1744	2.1	0.6		1829	3.0	0.9

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0028	5.5	1.7	16	0022	6.4	2.0
F	0723	-0.4	-0.1	Sa	0721	-1.5	-0.5
	1517	4.2	1.3		1510	4.6	1.4
	1911	3.4	1.0		1909	3.3	1.0
2	0106	5.3	1.6	17	0115	6.2	1.9
Sa	0808	-0.2	-0.1	Su	0817	-1.3	-0.4
	1616	4.2	1.3		1610	4.7	1.4
	2008	3.6	1.1		2019	3.4	1.0
3	0145	5.1	1.6	18	0217	5.8	1.8
Su	0900	0.1	0.0	M	0918	-1.0	-0.3
	1725	4.2	1.3		1706	4.8	1.5
	2123	3.6	1.1		2145	3.2	1.0
4	0237	4.8	1.5	19	0323	5.3	1.6
M	0956	0.2	0.1	Tu	1019	-0.6	-0.2
	1823	4.2	1.3		1758	4.9	1.5
	2246	3.5	1.1		2309	2.7	0.8
5	0336	4.5	1.4	20	0442	4.8	1.5
Tu	1056	0.4	0.1	W	1119	-0.2	-0.1
	1859	4.3	1.3		1847	5.2	1.6
6	0000	3.1	0.9	21	0025	2.0	0.6
W	0449	4.3	1.3	Th	0605	4.4	1.3
	1149	0.4	0.1		1214	0.2	0.1
	1931	4.5	1.4		1928	5.5	1.7
7	0056	2.6	0.8	22	0128	1.2	0.4
Th	0605	4.1	1.2	F	0727	4.2	1.3
	1239	0.5	0.2		1306	0.7	0.2
	1956	4.6	1.4		2007	5.7	1.7
8	0141	1.9	0.6	23	0223	0.4	0.1
F	0715	4.0	1.2	Sa	0842	4.1	1.2
	1324	0.7	0.2		1351	1.1	0.3
	2023	4.9	1.5		2041	5.9	1.8
9	0223	1.2	0.4	24	0309	-0.2	-0.1
Sa	0823	4.0	1.2	Su	0951	4.1	1.2
	1401	0.9	0.3		1437	1.7	0.5
	2049	5.2	1.6		2115	6.0	1.8
10	0302	0.5	0.2	25	0351	-0.6	-0.2
Su	0924	4.1	1.2	M	1053	4.2	1.3
	1440	1.2	0.4		1522	2.1	0.6
	2116	5.5	1.7		2147	6.0	1.8
11	0339	-0.2	-0.1	26	0433	-0.9	-0.3
M	1023	4.2	1.3	Tu	1145	4.3	1.3
	1519	1.6	0.5		1604	2.6	0.8
	2146	5.8	1.8		2219	6.0	1.8
12	0416	-0.8	-0.2	27	0511	-0.9	-0.3
Tu	1119	4.4	1.3	W	1238	4.4	1.3
	1557	2.1	0.6		1646	2.9	0.9
	2220	6.1	1.9		2248	5.9	1.8
13	0458	-1.2	-0.4	28	0546	-0.9	-0.3
W	1216	4.5	1.4	Th	1327	4.5	1.4
	1639	2.5	0.8		1728	3.2	1.0
	2255	6.3	1.9		2324	5.8	1.8
14	0543	-1.5	-0.5	29	0622	-0.8	-0.2
Th	1313	4.6	1.4	F	1414	4.4	1.3
	1721	2.9	0.9		1807	3.4	1.0
	2336	6.4	2.0		2359	5.6	1.7
15	0631	-1.6	-0.5	30	0700	-0.6	-0.2
F	1409	4.6	1.4	Sa	1459	4.4	1.3
	1810	3.2	1.0		1854	3.6	1.1
				31	0035	5.4	1.6
				Su	0740	-0.4	-0.1
					1547	4.4	1.3
					1944	3.6	1.1

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0116	5.2	1.6	16	0208	5.8	1.8
M	0825	-0.2	-0.1	Tu	0854	-0.9	-0.3
	1629	4.4	1.3		1623	5.2	1.6
	2046	3.5	1.1		2135	2.6	0.8
2	0202	4.8	1.5	17	0314	5.1	1.6
Tu	0911	0.0	0.0	W	0948	-0.3	-0.1
	1707	4.4	1.3		1709	5.4	1.6
	2200	3.3	1.0		2254	2.1	0.6
3	0257	4.4	1.3	18	0428	4.4	1.3
W	0957	0.2	0.1	Th	1039	0.3	0.1
	1743	4.5	1.4		1754	5.6	1.7
	2311	2.9	0.9				
4	0403	4.0	1.2	19	0006	1.4	0.4
Th	1043	0.5	0.2	F	0556	3.9	1.2
	1814	4.8	1.5		1131	1.0	0.3
					1837	5.9	1.8
5	0013	2.3	0.7	20	0112	0.8	0.2
F	0515	3.7	1.1	Sa	0728	3.7	1.1
	1131	0.9	0.3		1223	1.6	0.5
	1845	5.0	1.5		1919	6.0	1.8
6	0102	1.6	0.5	21	0208	0.2	0.1
Sa	0642	3.5	1.1	Su	0853	3.8	1.2
	1217	1.3	0.4		1317	2.2	0.7
	1918	5.4	1.6		1958	6.2	1.9
7	0147	0.8	0.2	22	0257	-0.3	-0.1
Su	0807	3.6	1.1	M	1002	4.1	1.2
	1305	1.7	0.5		1411	2.7	0.8
	1950	5.7	1.7		2037	6.2	1.9
8	0233	0.1	0.0	23	0339	-0.5	-0.2
M	0924	3.8	1.2	Tu	1059	4.3	1.3
	1354	2.2	0.7		1500	3.0	0.9
	2025	6.1	1.9		2113	6.2	1.9
9	0314	-0.6	-0.2	24	0417	-0.7	-0.2
Tu	1028	4.1	1.2	W	1150	4.5	1.4
	1436	2.6	0.8		1545	3.2	1.0
	2104	6.4	2.0		2151	6.1	1.9
10	0357	-1.2	-0.4	25	0456	-0.8	-0.2
W	1124	4.4	1.3	Th	1233	4.6	1.4
	1528	2.9	0.9		1631	3.4	1.0
	2147	6.7	2.0		2227	6.1	1.9
11	0443	-1.7	-0.5	26	0530	-0.7	-0.2
Th	1219	4.6	1.4	F	1315	4.6	1.4
	1617	3.1	0.9		1709	3.4	1.0
	2229	6.8	2.1		2301	6.0	1.8
12	0531	-1.9	-0.6	27	0604	-0.7	-0.2
F	1312	4.8	1.5	Sa	1353	4.6	1.4
	1709	3.2	1.0		1751	3.4	1.0
	2318	6.9	2.1		2340	5.8	1.8
13	0620	-1.9	-0.6	28	0639	-0.6	-0.2
Sa	1357	4.9	1.5	Su	1425	4.5	1.4
	1804	3.2	1.0		1833	3.4	1.0
14	0010	6.7	2.0	29	0015	5.6	1.7
Su	0709	-1.7	-0.5	M	0715	-0.5	-0.2
	1448	4.9	1.5		1457	4.5	1.4
	1904	3.1	0.9		1916	3.3	1.0
15	0107	6.3	1.9	30	0054	5.3	1.6
M	0802	-1.4	-0.4	Tu	0748	-0.3	-0.1
	1538	5.0	1.5		1529	4.6	1.4
	2017	2.9	0.9		2006	3.2	1.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0136	4.9	1.5	16	0303	4.8	1.5
W	0825	0.0	0.0	Th	0908	0.4	0.1
	1558	4.7	1.4		1616	5.7	1.7
	2109	2.9	0.9		2224	1.5	0.5
2	0225	4.4	1.3	17	0421	4.1	1.2
Th	0902	0.4	0.1	F	0956	1.2	0.4
	1630	4.9	1.5		1701	5.9	1.8
	2212	2.5	0.8		2338	1.1	0.3
3	0327	3.9	1.2	18	0554	3.7	1.1
F	0939	0.9	0.3	Sa	1049	2.0	0.6
	1701	5.2	1.6		1745	6.0	1.8
	2321	2.0	0.6				
4	0447	3.5	1.1	19	0045	0.7	0.2
Sa	1025	1.5	0.5	Su	0736	3.7	1.1
	1736	5.5	1.7		1151	2.6	0.8
					1831	6.1	1.9
5	0016	1.3	0.4	20	0145	0.3	0.1
Su	0628	3.4	1.0	M	0900	4.0	1.2
	1117	2.1	0.6		1253	3.0	0.9
	1815	5.8	1.8		1919	6.1	1.9
6	0112	0.6	0.2	21	0237	0.0	0.0
M	0810	3.6	1.1	Tu	1003	4.3	1.3
	1216	2.6	0.8		1356	3.3	1.0
	1858	6.2	1.9		2006	6.2	1.9
7	0204	-0.1	0.0	22	0322	-0.2	-0.1
Tu	0927	4.0	1.2	W	1053	4.6	1.4
	1315	3.0	0.9		1448	3.4	1.0
	1947	6.5	2.0		2049	6.2	1.9
8	0253	-0.8	-0.2	23	0359	-0.3	-0.1
W	1030	4.3	1.3	Th	1132	4.7	1.4
	1414	3.2	1.0		1534	3.4	1.0
	2036	6.8	2.1		2132	6.2	1.9
9	0342	-1.3	-0.4	24	0436	-0.4	-0.1
Th	1118	4.6	1.4	F	1207	4.7	1.4
	1511	3.3	1.0		1616	3.3	1.0
	2129	7.1	2.2		2211	6.1	1.9
10	0430	-1.7	-0.5	25	0511	-0.5	-0.2
F	1204	4.8	1.5	Sa	1239	4.7	1.4
	1605	3.2	1.0		1655	3.2	1.0
	2218	7.2	2.2		2249	6.0	1.8
11	0518	-1.8	-0.5	26	0543	-0.5	-0.2
Sa	1249	5.0	1.5	Su	1308	4.7	1.4
	1701	3.0	0.9		1731	3.0	0.9
	2310	7.1	2.2		2325	5.8	1.8
12	0606	-1.8	-0.5	27	0612	-0.4	-0.1
Su	1331	5.1	1.6	M	1336	4.7	1.4
	1756	2.8	0.9		1809	2.9	0.9
13	0005	6.8	2.1	28	0000	5.6	1.7
M	0652	-1.5	-0.5	Tu	0641	-0.2	-0.1
	1413	5.2	1.6		1401	4.8	1.5
	1854	2.5	0.8		1849	2.7	0.8
14	0057	6.2	1.9	29	0039	5.2	1.6
Tu	0738	-1.0	-0.3	W	0709	0.1	0.0
	1454	5.4	1.6		1425	4.9	1.5
	2000	2.2	0.7		1934	2.5	0.8
15	0157	5.5	1.7	30	0117	4.8	1.5
W	0822	-0.4	-0.1	Th	0740	0.5	0.2
	1533	5.6	1.7		1451	5.1	1.6
	2111	1.9	0.6		2027	2.2	0.7
				31	0209	4.3	1.3
				F	0811	1.0	0.3
					1523	5.3	1.6
					2122	1.9	0.6

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0312	3.9	1.2	16	0601	3.9	1.2
Sa	0850	1.7	0.5	Su	1016	2.9	0.9
	1559	5.5	1.7		1653	5.9	1.8
	2225	1.5	0.5				
2	0437	3.6	1.1	17	0008	0.8	0.2
Su	0933	2.3	0.7	M	0743	4.1	1.2
	1638	5.8	1.8		1132	3.3	1.0
	2334	1.0	0.3		1749	5.8	1.8
3	0635	3.6	1.1	18	0114	0.6	0.2
M	1031	2.9	0.9	Tu	0857	4.4	1.3
	1727	6.0	1.8		1245	3.5	1.1
					1847	5.8	1.8
4	0039	0.5	0.2	19	0210	0.4	0.1
Tu	0820	3.9	1.2	W	0946	4.6	1.4
	1147	3.3	1.0		1350	3.5	1.1
	1823	6.3	1.9		1942	5.9	1.8
5	0142	-0.1	0.0	20	0257	0.2	0.1
W	0925	4.3	1.3	Th	1025	4.8	1.5
	1301	3.5	1.1		1441	3.3	1.0
	1922	6.6	2.0		2031	6.0	1.8
6	0234	-0.7	-0.2	21	0337	0.0	0.0
Th	1017	4.6	1.4	F	1056	4.8	1.5
	1405	3.4	1.0		1522	3.1	0.9
	2021	6.9	2.1		2116	6.0	1.8
7	0326	-1.2	-0.4	22	0409	-0.1	0.0
F	1059	4.9	1.5	Sa	1125	4.8	1.5
	1505	3.1	0.9		1601	2.8	0.9
	2116	7.1	2.2		2156	5.9	1.8
8	0415	-1.4	-0.4	23	0441	-0.2	-0.1
Sa	1135	5.0	1.5	Su	1150	4.8	1.5
	1558	2.7	0.8		1638	2.5	0.8
	2212	7.1	2.2		2234	5.8	1.8
9	0500	-1.5	-0.5	24	0510	-0.2	-0.1
Su	1214	5.2	1.6	M	1212	4.8	1.5
	1651	2.3	0.7		1709	2.3	0.7
	2305	6.9	2.1		2313	5.6	1.7
10	0542	-1.3	-0.4	25	0538	0.0	0.0
M	1249	5.4	1.6	Tu	1236	4.9	1.5
	1746	1.9	0.6		1745	2.0	0.6
					2351	5.3	1.6
11	0000	6.5	2.0	26	0603	0.3	0.1
Tu	0623	-0.9	-0.3	W	1259	5.1	1.6
	1326	5.5	1.7		1823	1.7	0.5
	1839	1.6	0.5				
12	0055	5.9	1.8	27	0030	5.0	1.5
W	0704	-0.2	-0.1	Th	0632	0.7	0.2
	1403	5.7	1.7		1323	5.2	1.6
	1938	1.3	0.4		1902	1.5	0.5
13	0152	5.2	1.6	28	0116	4.6	1.4
Th	0746	0.5	0.2	F	0700	1.3	0.4
	1442	5.8	1.8		1349	5.4	1.6
	2040	1.1	0.3		1948	1.3	0.4
14	0259	4.5	1.4	29	0209	4.3	1.3
F	0829	1.4	0.4	Sa	0732	1.9	0.6
	1521	5.9	1.8		1421	5.6	1.7
	2146	1.0	0.3		2043	1.1	0.3
15	0418	4.0	1.2	30	0320	4.0	1.2
Sa	0917	2.2	0.7	Su	0808	2.5	0.8
	1603	5.9	1.8		1500	5.8	1.8
	2258	0.9	0.3		2145	0.9	0.3
				31	0458	3.8	1.2
				M	0856	3.1	0.9
					1549	5.9	1.8
					2255	0.6	0.2

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0655	4.0	1.2	16	0032	0.8	0.2
Tu	1012	3.6	1.1	W	0828	4.6	1.4
	1648	6.0	1.8		1241	3.6	1.1
					1811	5.4	1.6
2	0010	0.3	0.1	17	0130	0.6	0.2
W	0818	4.3	1.3	Th	0908	4.7	1.4
	1145	3.7	1.1		1338	3.3	1.0
	1759	6.2	1.9		1914	5.4	1.6
3	0118	-0.2	-0.1	18	0220	0.5	0.2
Th	0903	4.6	1.4	F	0942	4.8	1.5
	1304	3.5	1.1		1426	2.9	0.9
	1906	6.4	2.0		2006	5.5	1.7
4	0215	-0.6	-0.2	19	0258	0.3	0.1
F	0942	4.9	1.5	Sa	1006	4.9	1.5
	1408	3.0	0.9		1505	2.5	0.8
	2012	6.6	2.0		2055	5.5	1.7
5	0308	-0.8	-0.2	20	0330	0.2	0.1
Sa	1021	5.1	1.6	Su	1032	4.9	1.5
	1503	2.4	0.7		1542	2.1	0.6
	2112	6.6	2.0		2138	5.4	1.6
6	0353	-0.9	-0.3	21	0402	0.3	0.1
Su	1056	5.3	1.6	M	1054	5.0	1.5
	1554	1.8	0.5		1614	1.7	0.5
	2210	6.5	2.0		2220	5.3	1.6
7	0433	-0.8	-0.2	22	0428	0.4	0.1
M	1128	5.5	1.7	Tu	1115	5.2	1.6
	1644	1.3	0.4		1650	1.3	0.4
	2303	6.3	1.9		2304	5.1	1.6
8	0512	-0.4	-0.1	23	0456	0.7	0.2
Tu	1203	5.7	1.7	W	1137	5.3	1.6
	1733	0.8	0.2		1722	0.9	0.3
	2358	5.8	1.8		2346	5.0	1.5
9	0551	0.2	0.1	24	0524	1.2	0.4
W	1235	5.8	1.8	Th	1200	5.5	1.7
	1823	0.5	0.2		1758	0.6	0.2
10	0052	5.3	1.6	25	0033	4.7	1.4
Th	0629	0.9	0.3	F	0553	1.7	0.5
	1310	5.9	1.8		1225	5.7	1.7
	1912	0.4	0.1		1839	0.4	0.1
11	0152	4.8	1.5	26	0124	4.5	1.4
F	0709	1.6	0.5	Sa	0625	2.2	0.7
	1343	5.9	1.8		1257	5.8	1.8
	2007	0.4	0.1		1924	0.3	0.1
12	0259	4.4	1.3	27	0228	4.3	1.3
Sa	0750	2.4	0.7	Su	0700	2.8	0.9
	1422	5.8	1.8		1332	5.9	1.8
	2103	0.6	0.2		2017	0.2	0.1
13	0423	4.2	1.3	28	0347	4.2	1.3
Su	0841	3.1	0.9	M	0742	3.3	1.0
	1507	5.7	1.7		1418	5.9	1.8
	2209	0.7	0.2		2119	0.2	0.1
14	0600	4.2	1.3	29	0522	4.2	1.3
M	0957	3.5	1.1	Tu	0846	3.7	1.1
	1557	5.5	1.7		1515	5.9	1.8
	2321	0.8	0.2		2232	0.2	0.1
15	0733	4.4	1.3	30	0646	4.4	1.3
Tu	1123	3.7	1.1	W	1024	3.8	1.2
	1703	5.4	1.6		1629	5.8	1.8
					2347	0.0	0.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SAN FRANCISCO (Golden Gate), CALIFORNIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0744	4.7	1.4
Th	1157	3.6	1.1
	1745	5.8	1.8
2	0053	-0.2	-0.1
F	0829	4.9	1.5
	1309	3.0	0.9
	1901	5.9	1.8
3	0147	-0.3	-0.1
Sa	0905	5.2	1.6
	1407	2.3	0.7
	2010	5.9	1.8
4	0236	-0.3	-0.1
Su	0940	5.5	1.7
	1458	1.5	0.5
	2113	5.8	1.8
5	0319	-0.1	0.0
M	1013	5.7	1.7
	1548	0.8	0.2
	2209	5.7	1.7
6	0401	0.2	0.1
Tu	1045	5.9	1.8
	1634	0.2	0.1
	2307	5.5	1.7
7	0440	0.7	0.2
W	1115	6.1	1.9
	1719	-0.2	-0.1
8	0001	5.2	1.6
Th	0518	1.4	0.4
	1147	6.1	1.9
	1801	-0.3	-0.1
9	0057	4.9	1.5
F	0556	2.0	0.6
	1219	6.1	1.9
	1847	-0.3	-0.1
10	0200	4.7	1.4
Sa	0635	2.7	0.8
	1251	6.0	1.8
	1935	-0.1	0.0
11	0306	4.5	1.4
Su	0721	3.2	1.0
	1329	5.8	1.8
	2024	0.2	0.1
12	0421	4.4	1.3
M	0819	3.7	1.1
	1411	5.5	1.7
	2123	0.5	0.2
13	0547	4.5	1.4
Tu	0939	3.9	1.2
	1507	5.2	1.6
	2229	0.7	0.2
14	0657	4.6	1.4
W	1111	3.8	1.2
	1613	5.0	1.5
	2338	0.8	0.2
15	0744	4.7	1.4
Th	1224	3.5	1.1
	1725	4.9	1.5
16	0038	0.7	0.2
F	0820	4.8	1.5
	1320	3.0	0.9
	1834	4.8	1.5
17	0127	0.7	0.2
Sa	0846	4.9	1.5
	1404	2.5	0.8
	1937	4.8	1.5
18	0206	0.7	0.2
Su	0908	5.0	1.5
	1442	1.9	0.6
	2034	4.8	1.5
19	0242	0.7	0.2
M	0932	5.2	1.6
	1518	1.4	0.4
	2124	4.8	1.5
20	0313	0.9	0.3
Tu	0954	5.4	1.6
	1553	0.8	0.2
	2213	4.7	1.4
21	0345	1.2	0.4
W	1017	5.6	1.7
	1625	0.3	0.1
	2302	4.7	1.4
22	0413	1.6	0.5
Th	1043	5.9	1.8
	1700	-0.1	0.0
	2352	4.7	1.4
23	0445	2.1	0.6
F	1110	6.1	1.9
	1739	-0.4	-0.1
24	0045	4.7	1.4
Sa	0520	2.6	0.8
	1140	6.2	1.9
	1818	-0.6	-0.2
25	0141	4.6	1.4
Su	0556	3.1	0.9
	1215	6.3	1.9
	1907	-0.6	-0.2
26	0245	4.6	1.4
M	0639	3.5	1.1
	1257	6.2	1.9
	1959	-0.5	-0.2
27	0355	4.5	1.4
Tu	0737	3.7	1.1
	1352	6.1	1.9
	2100	-0.4	-0.1
28	0512	4.6	1.4
W	0856	3.9	1.2
	1455	5.8	1.8
	2209	-0.2	-0.1
29	0611	4.8	1.5
Th	1035	3.7	1.1
	1611	5.5	1.7
	2316	-0.1	0.0
30	0700	5.0	1.5
F	1159	3.1	0.9
	1733	5.3	1.6
31	0019	0.0	0.0
Sa	0742	5.3	1.6
	1309	2.3	0.7
	1856	5.1	1.6

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0112	0.2	0.1
Su	0823	5.6	1.7
	1405	1.5	0.5
	2009	5.0	1.5
2	0202	0.5	0.2
M	0856	5.9	1.8
	1454	0.6	0.2
	2116	5.0	1.5
3	0244	0.9	0.3
Tu	0929	6.2	1.9
	1540	0.0	0.0
	2218	4.9	1.5
4	0326	1.4	0.4
W	1001	6.3	1.9
	1622	-0.5	-0.2
	2318	4.9	1.5
5	0406	1.9	0.6
Th	1034	6.4	2.0
	1704	-0.8	-0.2
6	0012	4.9	1.5
F	0449	2.5	0.8
	1106	6.4	2.0
	1745	-0.8	-0.2
7	0108	4.8	1.5
Sa	0527	3.0	0.9
	1138	6.2	1.9
	1824	-0.7	-0.2
8	0203	4.7	1.4
Su	0609	3.4	1.0
	1210	6.0	1.8
	1907	-0.4	-0.1
9	0300	4.7	1.4
M	0658	3.7	1.1
	1247	5.8	1.8
	1954	-0.1	0.0
10	0403	4.6	1.4
Tu	0755	3.9	1.2
	1329	5.5	1.7
	2043	0.2	0.1
11	0505	4.6	1.4
W	0910	3.9	1.2
	1421	5.1	1.6
	2139	0.5	0.2
12	0600	4.7	1.4
Th	1035	3.8	1.2
	1523	4.8	1.5
	2236	0.6	0.2
13	0642	4.7	1.4
F	1150	3.4	1.0
	1632	4.5	1.4
	2332	0.8	0.2
14	0711	4.9	1.5
Sa	1246	2.8	0.9
	1745	4.2	1.3
15	0018	1.0	0.3
Su	0739	5.1	1.6
	1335	2.2	0.7
	1901	4.1	1.2
16	0104	1.2	0.4
M	0804	5.3	1.6
	1414	1.5	0.5
	2010	4.1	1.2
17	0143	1.4	0.4
Tu	0828	5.6	1.7
	1452	0.8	0.2
	2113	4.2	1.3
18	0221	1.8	0.5
W	0857	5.9	1.8
	1526	0.2	0.1
	2213	4.4	1.3
19	0300	2.2	0.7
Th	0926	6.2	1.9
	1603	-0.4	-0.1
	2306	4.5	1.4
20	0334	2.6	0.8
F	0957	6.4	2.0
	1642	-0.8	-0.2
21	0001	4.7	1.4
Sa	0416	2.9	0.9
	1030	6.6	2.0
	1724	-1.1	-0.3
22	0052	4.8	1.5
Su	0458	3.3	1.0
	1111	6.7	2.0
	1806	-1.3	-0.4
23	0148	4.8	1.5
M	0540	3.5	1.1
	1154	6.7	2.0
	1854	-1.2	-0.4
24	0241	4.9	1.5
Tu	0633	3.7	1.1
	1241	6.5	2.0
	1947	-1.0	-0.3
25	0337	4.9	1.5
W	0740	3.7	1.1
	1340	6.2	1.9
	2043	-0.8	-0.2
26	0433	5.0	1.5
Th	0900	3.5	1.1
	1446	5.7	1.7
	2142	-0.4	-0.1
27	0525	5.2	1.6
F	1028	3.1	0.9
	1559	5.2	1.6
	2241	0.0	0.0
28	0613	5.4	1.6
Sa	1149	2.4	0.7
	1725	4.7	1.4
	2338	0.5	0.2
29	0656	5.8	1.8
Su	1258	1.6	0.5
	1851	4.4	1.3
30	0032	1.0	0.3
M	0736	6.1	1.9
	1357	0.8	0.2
	2015	4.3	1.3

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0121	1.5	0.5
Tu	0812	6.3	1.9
	1449	0.1	0.0
	2129	4.4	1.3
2	0213	2.0	0.6
W	0850	6.5	2.0
	1531	-0.4	-0.1
	2232	4.6	1.4
3	0259	2.5	0.8
Th	0926	6.6	2.0
	1613	-0.8	-0.2
	2329	4.7	1.4
4	0345	2.9	0.9
F	1001	6.6	2.0
	1652	-0.9	-0.3
5	0021	4.9	1.5
Sa	0430	3.2	1.0
	1035	6.5	2.0
	1730	-0.8	-0.2
6	0111	4.9	1.5
Su	0512	3.5	1.1
	1110	6.3	1.9
	1809	-0.7	-0.2
7	0153	4.9	1.5
M	0554	3.7	1.1
	1142	6.1	1.9
	1847	-0.5	-0.2
8	0240	4.8	1.5
Tu	0638	3.8	1.2
	1221	5.9	1.8
	1926	-0.3	-0.1
9	0327	4.7	1.4
W	0729	3.8	1.2
	1303	5.5	1.7
	2008	0.0	0.0
10	0406	4.7	1.4
Th	0827	3.7	1.1
	1345	5.1	1.6
	2051	0.2	0.1
11	0448	4.7	1.4
F	0939	3.5	1.1
	1437	4.7	1.4
	2133	0.6	0.2
12	0519	4.8	1.5
Sa	1051	3.1	0.9
	1536	4.2	1.3
	2219	0.9	0.3
13	0551	5.0	1.5
Su	1157	2.6	0.8
	1657	3.8	1.2
	2305	1.3	0.4
14	0622	5.3	1.6
M	1251	1.9	0.6
	1828	3.6	1.1
	2353	1.8	0.5
15	0654	5.6	1.7
Tu	1338	1.2	0.4
	1957	3.7	1.1
16	0045	2.2	0.7
W	0728	5.9	1.8
	1420	0.5	0.2
	2116	4.0	1.2
17	0131	2.7	0.8
Th	0804	6.3	1.9
	1502	-0.2	-0.1
	2218	4.3	1.3
18	0221	3.0	0.9
F	0844	6.6	2.0
	1541	-0.7	-0.2
	2311	4.6	1.4
19	0309	3.3	1.0
Sa	0926	6.9	2.1
	1626	-1.2	-0.4
20	0000	4.8	1.5
Su	0354	3.4	1.0
	1009	7.1	2.2
	1710	-1.5	-0.5
21	0045	5.0	1.5
M	0444	3.4	1.0
	1055	7.1	2.2
	1756	-1.6	-0.5
22	0132	5.0	1.5
Tu	0535	3.4	1.0
	1145	7.0	2.1
	1842	-1.5	-0.5
23	0219	5.1	1.6
W	0633	3.3	1.0
	1239	6.7	2.0
	1932	-1.3	-0.4
24	0301	5.2	1.6
Th	0736	3.1	0.9
	1333	6.2	1.9
	2021	-0.8	-0.2
25	0347	5.3	1.6
F	0850	2.8	0.9
	1437	5.5	1.7
	2111	-0.2	-0.1
26	0434	5.6	1.7
Sa	1007	2.4	0.7
	1548	4.8	1.5
	2203	0.5	0.2
27	0518	5.8	1.8
Su	1128	1.8	0.5
	1716	4.2	1.3
	2254	1.2	0.4
28	0603	6.1	1.9
M	1242	1.1	0.3
	1856	3.9	1.2
	2353	1.9	0.6
29	0648	6.3	1.9
Tu	1341	0.4	0.1
	2029	4.0	1.2
30	0049	2.5	0.8
W	0733	6.5	2.0
	1437	-0.1	0.0
	2143	4.3	1.3
31	0149	3.0	0.9
Th	0817	6.5	2.0
	1522	-0.4	-0.1
	2243	4.6	1.4

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HUMBOLDT BAY, CALIFORNIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0120	5.8	1.8	16	0132	5.4	1.6
Th	0558	3.1	0.9	F	0609	3.3	1.0
	1157	8.4	2.6		1158	7.0	2.1
	1912	-2.2	-0.7		1908	-0.7	-0.2
2	0205	6.0	1.8	17	0200	5.5	1.7
F	0655	3.0	0.9	Sa	0651	3.2	1.0
	1249	8.0	2.4		1230	6.8	2.1
	1957	-1.8	-0.5		1939	-0.5	-0.2
3	0251	6.2	1.9	18	0229	5.6	1.7
Sa	0755	2.8	0.9	Su	0733	3.0	0.9
	1341	7.3	2.2		1312	6.5	2.0
	2040	-1.1	-0.3		2009	-0.2	-0.1
4	0335	6.4	2.0	19	0254	5.8	1.8
Su	0858	2.6	0.8	M	0822	2.8	0.9
	1440	6.5	2.0		1355	6.1	1.9
	2126	-0.4	-0.1		2042	0.3	0.1
5	0418	6.6	2.0	20	0325	6.1	1.9
M	1007	2.3	0.7	Tu	0914	2.5	0.8
	1543	5.6	1.7		1447	5.5	1.7
	2209	0.5	0.2		2114	0.8	0.2
6	0503	6.7	2.0	21	0354	6.3	1.9
Tu	1119	2.0	0.6	W	1016	2.0	0.6
	1702	4.8	1.5		1547	4.9	1.5
	2251	1.3	0.4		2151	1.5	0.5
7	0549	6.9	2.1	22	0433	6.6	2.0
W	1232	1.5	0.5	Th	1122	1.5	0.5
	1832	4.3	1.3		1711	4.4	1.3
	2339	2.1	0.6		2237	2.2	0.7
8	0633	6.9	2.1	23	0515	6.9	2.1
Th	1338	0.9	0.3	F	1233	0.8	0.2
	2003	4.2	1.3		1853	4.2	1.3
					2329	2.8	0.9
9	0032	2.7	0.8	24	0605	7.2	2.2
F	0718	7.0	2.1	Sa	1343	0.1	0.0
	1439	0.4	0.1		2037	4.3	1.3
	2122	4.4	1.3				
10	0131	3.2	1.0	25	0035	3.3	1.0
Sa	0803	7.0	2.1	Su	0705	7.5	2.3
	1529	0.0	0.0		1445	-0.7	-0.2
	2225	4.7	1.4		2149	4.7	1.4
11	0227	3.5	1.1	26	0150	3.5	1.1
Su	0847	7.0	2.1	M	0807	7.8	2.4
	1611	-0.3	-0.1		1542	-1.3	-0.4
	2313	4.9	1.5		2247	5.1	1.6
12	0322	3.6	1.1	27	0300	3.5	1.1
M	0927	7.0	2.1	Tu	0908	8.1	2.5
	1651	-0.6	-0.2		1635	-1.8	-0.5
	2355	5.1	1.6		2335	5.5	1.7
13	0411	3.6	1.1	28	0400	3.2	1.0
Tu	1009	7.1	2.2	W	1007	8.3	2.5
	1728	-0.7	-0.2		1723	-2.0	-0.6
14	0031	5.2	1.6	29	0015	5.8	1.8
W	0451	3.5	1.1	Th	0459	2.9	0.9
	1048	7.1	2.2		1100	8.3	2.5
	1803	-0.8	-0.2		1809	-2.0	-0.6
15	0103	5.3	1.6	30	0054	6.1	1.9
Th	0531	3.4	1.0	F	0553	2.5	0.8
	1123	7.1	2.2		1152	8.1	2.5
	1836	-0.8	-0.2		1851	-1.7	-0.5
				31	0132	6.4	2.0
				Sa	0648	2.2	0.7
					1244	7.6	2.3
					1930	-1.2	-0.4

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0209	6.6	2.0	16	0136	6.2	1.9
Su	0742	1.9	0.6	M	0718	1.9	0.6
	1336	6.9	2.1		1307	6.3	1.9
	2009	-0.4	-0.1		1933	0.4	0.1
2	0246	6.8	2.1	17	0158	6.4	2.0
M	0839	1.6	0.5	Tu	0803	1.6	0.5
	1429	6.1	1.9		1349	5.9	1.8
	2045	0.4	0.1		2003	0.9	0.3
3	0323	6.9	2.1	18	0227	6.6	2.0
Tu	0938	1.4	0.4	W	0851	1.2	0.4
	1527	5.3	1.6		1443	5.3	1.6
	2123	1.2	0.4		2037	1.5	0.5
4	0401	6.9	2.1	19	0259	6.8	2.1
W	1040	1.3	0.4	Th	0947	0.9	0.3
	1640	4.6	1.4		1547	4.8	1.5
	2201	2.0	0.6		2112	2.2	0.7
5	0443	6.8	2.1	20	0338	7.0	2.1
Th	1146	1.1	0.3	F	1050	0.6	0.2
	1808	4.2	1.3		1714	4.3	1.3
	2247	2.8	0.9		2157	2.8	0.9
6	0529	6.6	2.0	21	0424	7.1	2.2
F	1255	0.9	0.3	Sa	1205	0.3	0.1
	1949	4.1	1.2		1859	4.2	1.3
	2342	3.3	1.0		2300	3.4	1.0
7	0624	6.5	2.0	22	0529	7.1	2.2
Sa	1401	0.6	0.2	Su	1318	-0.2	-0.1
	2111	4.4	1.3		2035	4.5	1.4
8	0051	3.7	1.1	23	0019	3.7	1.1
Su	0724	6.5	2.0	M	0641	7.2	2.2
	1500	0.3	0.1		1427	-0.6	-0.2
	2206	4.7	1.4		2140	4.9	1.5
9	0204	3.7	1.1	24	0143	3.6	1.1
M	0820	6.6	2.0	Tu	0757	7.4	2.3
	1548	0.0	0.0		1527	-1.0	-0.3
	2252	4.9	1.5		2228	5.3	1.6
10	0306	3.6	1.1	25	0300	3.3	1.0
Tu	0909	6.7	2.0	W	0906	7.6	2.3
	1630	-0.2	-0.1		1616	-1.3	-0.4
	2329	5.1	1.6		2307	5.8	1.8
11	0356	3.4	1.0	26	0402	2.7	0.8
W	0957	6.9	2.1	Th	1005	7.8	2.4
	1705	-0.4	-0.1		1702	-1.3	-0.4
	2359	5.3	1.6		2343	6.2	1.9
12	0438	3.2	1.0	27	0458	2.1	0.6
Th	1036	7.0	2.1	F	1059	7.7	2.3
	1739	-0.5	-0.2		1745	-1.1	-0.3
13	0024	5.5	1.7	28	0018	6.6	2.0
F	0519	2.9	0.9	Sa	0549	1.6	0.5
	1112	7.0	2.1		1150	7.4	2.3
	1808	-0.5	-0.2		1822	-0.7	-0.2
14	0049	5.7	1.7				
Sa	0557	2.6	0.8				
	1150	6.9	2.1				
	1836	-0.3	-0.1				
15	0113	5.9	1.8				
Su	0636	2.3	0.7				
	1226	6.7	2.0				
	1905	-0.1	0.0				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0050	6.9	2.1	16	0018	6.5	2.0
Su	0639	1.1	0.3	M	0620	1.1	0.3
	1239	7.0	2.1		1223	6.4	2.0
	1856	-0.1	0.0		1829	0.8	0.2
2	0122	7.0	2.1	17	0043	6.8	2.1
M	0727	0.8	0.2	Tu	0659	0.6	0.2
	1331	6.4	2.0		1305	6.1	1.9
	1931	0.6	0.2		1857	1.3	0.4
3	0154	7.1	2.2	18	0108	7.0	2.1
Tu	0813	0.6	0.2	W	0744	0.3	0.1
	1420	5.8	1.8		1354	5.7	1.7
	2005	1.4	0.4		1929	1.8	0.5
4	0226	7.0	2.1	19	0137	7.2	2.2
W	0904	0.6	0.2	Th	0830	0.0	0.0
	1516	5.1	1.6		1451	5.2	1.6
	2038	2.1	0.6		2004	2.4	0.7
5	0259	6.8	2.1	20	0214	7.3	2.2
Th	0957	0.7	0.2	F	0925	-0.1	0.0
	1623	4.6	1.4		1557	4.8	1.5
	2115	2.7	0.8		2046	2.9	0.9
6	0336	6.6	2.0	21	0259	7.2	2.2
F	1057	0.8	0.2	Sa	1028	-0.1	0.0
	1746	4.3	1.3		1725	4.6	1.4
	2201	3.3	1.0		2139	3.4	1.0
7	0425	6.3	1.9	22	0355	7.0	2.1
Sa	1202	0.9	0.3	Su	1140	-0.2	-0.1
	1919	4.3	1.3		1900	4.6	1.4
	2303	3.7	1.1		2255	3.7	1.1
8	0525	6.1	1.9	23	0508	6.9	2.1
Su	1314	0.8	0.2	M	1256	-0.3	-0.1
	2042	4.5	1.4		2018	4.9	1.5
9	0026	3.9	1.2	24	0029	3.7	1.1
M	0641	6.0	1.8	Tu	0633	6.8	2.1
	1418	0.6	0.2		1404	-0.4	-0.1
	2134	4.8	1.5		2112	5.4	1.6
10	0146	3.7	1.1	25	0154	3.3	1.0
Tu	0751	6.1	1.9	W	0755	6.8	2.1
	1511	0.4	0.1		1500	-0.5	-0.2
	2214	5.0	1.5		2154	5.8	1.8
11	0249	3.4	1.0	26	0304	2.6	0.8
W	0850	6.3	1.9	Th	0905	6.9	2.1
	1553	0.2	0.1		1549	-0.5	-0.2
	2246	5.3	1.6		2229	6.3	1.9
12	0341	3.0	0.9	27	0403	1.9	0.6
Th	0938	6.5	2.0	F	1004	7.0	2.1
	1629	0.1	0.0		1633	-0.3	-0.1
	2312	5.6	1.7		2303	6.7	2.0
13	0423	2.6	0.8	28	0453	1.2	0.4
F	1020	6.6	2.0	Sa	1059	6.9	2.1
	1701	0.1	0.0		1711	0.1	0.0
	2335	5.9	1.8		2334	7.1	2.2
14	0503	2.1	0.6	29	0542	0.6	0.2
Sa	1102	6.6	2.0	Su	1148	6.6	2.0
	1730	0.2	0.1		1747	0.6	0.2
	2356	6.2	1.9				
15	0541	1.6	0.5	30	0005	7.3	2.2
Su	1141	6.5	2.0	M	0624	0.1	0.0
	1758	0.4	0.1		1238	6.3	1.9
					1820	1.2	0.4
				31	0033	7.3	2.2
				Tu	0706	-0.1	0.0
					1324	5.9	1.8
					1854	1.8	0.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0103	7.2	2.2	16	0024	7.6	2.3
W	0748	-0.2	-0.1	Th	0725	-0.9	-0.3
	1416	5.5	1.7		1401	5.5	1.7
	1929	2.4	0.7		1903	2.7	0.8
2	0132	7.0	2.1	17	0100	7.7	2.3
Th	0830	-0.1	0.0	F	0817	-1.0	-0.3
	1509	5.1	1.6		1502	5.3	1.6
	2004	2.9	0.9		1946	3.1	0.9
3	0205	6.8	2.1	18	0145	7.5	2.3
F	0918	0.2	0.1	Sa	0910	-0.9	-0.3
	1608	4.8	1.5		1609	5.1	1.6
	2043	3.3	1.0		2038	3.5	1.1
4	0240	6.4	2.0	19	0235	7.3	2.2
Sa	1010	0.5	0.2	Su	1012	-0.7	-0.2
	1724	4.6	1.4		1729	5.0	1.5
	2132	3.7	1.1		2147	3.7	1.1
5	0328	6.1	1.9	20	0339	6.9	2.1
Su	1112	0.7	0.2	M	1118	-0.5	-0.2
	1847	4.6	1.4		1843	5.2	1.6
	2239	3.9	1.2		2312	3.7	1.1
6	0433	5.8	1.8	21	0501	6.5	2.0
M	1219	0.8	0.2	Tu	1228	-0.2	-0.1
	1956	4.7	1.4		1943	5.6	1.7
7	0003	3.9	1.2	22	0042	3.3	1.0
Tu	0552	5.6	1.7	W	0627	6.2	1.9
	1323	0.8	0.2		1330	0.0	0.0
	2047	5.0	1.5		2029	6.0	1.8
8	0124	3.6	1.1	23	0201	2.6	0.8
W	0711	5.7	1.7	Th	0750	6.1	1.9
	1415	0.7	0.2		1423	0.2	0.1
	2120	5.3	1.6		2111	6.5	2.0
9	0227	3.1	0.9	24	0303	1.8	0.5
Th	0817	5.8	1.8	F	0903	6.1	1.9
	1501	0.7	0.2		1511	0.5	0.2
	2148	5.6	1.7		2145	6.9	2.1
10	0316	2.5	0.8	25	0359	1.0	0.3
F	0913	5.9	1.8	Sa	1005	6.0	1.8
	1540	0.7	0.2		1554	1.0	0.3
	2212	6.0	1.8		2218	7.2	2.2
11	0359	1.8	0.5	26	0444	0.3	0.1
Sa	1002	6.0	1.8	Su	1059	6.0	1.8
	1614	0.9	0.3		1633	1.4	0.4
	2236	6.4	2.0		2250	7.4	2.3
12	0441	1.1	0.3	27	0526	-0.3	-0.1
Su	1047	6.1	1.9	M	1149	5.9	1.8
	1645	1.1	0.3		1711	1.9	0.6
	2259	6.8	2.1		2318	7.5	2.3
13	0519	0.5	0.2	28	0608	-0.6	-0.2
M	1133	6.1	1.9	Tu	1239	5.7	1.7
	1718	1.4	0.4		1746	2.4	0.7
	2324	7.1	2.2		2350	7.4	2.3
14	0600	-0.2	-0.1	29	0645	-0.7	-0.2
Tu	1220	6.0	1.8	W	1327	5.5	1.7
	1750	1.8	0.5		1821	2.8	0.9
	2352	7.4	2.3				
15	0642	-0.6	-0.2	30	0018	7.2	2.2
W	1309	5.8	1.8	Th	0722	-0.7	-0.2
	1825	2.3	0.7		1414	5.3	1.6
					1857	3.2	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0047	7.0	2.1	16	0039	8.0	2.4
F	0803	-0.5	-0.2	Sa	0806	-1.7	-0.5
	1503	5.1	1.6		1509	5.5	1.7
	1935	3.5	1.1		1934	3.5	1.1
2	0121	6.7	2.0	17	0129	7.7	2.3
Sa	0846	-0.2	-0.1	Su	0858	-1.4	-0.4
	1559	5.0	1.5		1608	5.5	1.7
	2017	3.7	1.1		2040	3.6	1.1
3	0159	6.4	2.0	18	0225	7.2	2.2
Su	0935	0.1	0.0	M	0954	-1.0	-0.3
	1658	4.9	1.5		1709	5.6	1.7
	2108	3.9	1.2		2155	3.6	1.1
4	0248	6.0	1.8	19	0334	6.6	2.0
M	1027	0.4	0.1	Tu	1054	-0.6	-0.2
	1801	4.9	1.5		1808	5.9	1.8
	2218	3.9	1.2		2319	3.3	1.0
5	0347	5.7	1.7	20	0453	6.0	1.8
Tu	1124	0.7	0.2	W	1152	0.0	0.0
	1859	5.1	1.6		1858	6.2	1.9
	2339	3.8	1.2				
6	0500	5.4	1.6	21	0043	2.7	0.8
W	1220	0.9	0.3	Th	0619	5.5	1.7
	1941	5.3	1.6		1248	0.5	0.2
					1943	6.7	2.0
7	0053	3.4	1.0	22	0154	1.8	0.5
Th	0622	5.2	1.6	F	0743	5.3	1.6
	1312	1.0	0.3		1338	1.1	0.3
	2014	5.7	1.7		2023	7.1	2.2
8	0156	2.7	0.8	23	0254	1.0	0.3
F	0738	5.2	1.6	Sa	0900	5.2	1.6
	1357	1.2	0.4		1429	1.6	0.5
	2041	6.1	1.9		2101	7.3	2.2
9	0248	1.9	0.6	24	0347	0.2	0.1
Sa	0845	5.3	1.6	Su	1006	5.2	1.6
	1439	1.4	0.4		1511	2.1	0.6
	2108	6.5	2.0		2135	7.5	2.3
10	0335	1.1	0.3	25	0429	-0.3	-0.1
Su	0944	5.4	1.6	M	1103	5.3	1.6
	1521	1.7	0.5		1556	2.6	0.8
	2138	6.9	2.1		2208	7.5	2.3
11	0417	0.2	0.1	26	0511	-0.7	-0.2
M	1039	5.5	1.7	Tu	1153	5.4	1.6
	1557	2.1	0.6		1635	2.9	0.9
	2206	7.4	2.3		2239	7.5	2.3
12	0500	-0.6	-0.2	27	0549	-0.9	-0.3
Tu	1130	5.6	1.7	W	1239	5.4	1.6
	1635	2.4	0.7		1715	3.2	1.0
	2238	7.7	2.3		2312	7.3	2.2
13	0543	-1.2	-0.4	28	0625	-0.9	-0.3
W	1223	5.7	1.7	Th	1324	5.4	1.6
	1717	2.8	0.9		1752	3.5	1.1
	2313	8.0	2.4		2344	7.2	2.2
14	0625	-1.6	-0.5	29	0703	-0.8	-0.2
Th	1314	5.6	1.7	F	1408	5.3	1.6
	1759	3.1	0.9		1831	3.6	1.1
	2353	8.1	2.5				
15	0713	-1.8	-0.5	30	0016	7.0	2.1
F	1409	5.5	1.7	Sa	0742	-0.7	-0.2
	1845	3.3	1.0		1452	5.2	1.6
					1913	3.8	1.2
				31	0052	6.7	2.0
				Su	0821	-0.4	-0.1
					1536	5.2	1.6
					1958	3.8	1.2

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0130	6.5	2.0	16	0222	7.1	2.2
M	0904	-0.1	0.0	Tu	0931	-1.0	-0.3
	1623	5.2	1.6		1634	6.2	1.9
	2051	3.8	1.2		2152	3.0	0.9
2	0216	6.1	1.9	17	0328	6.3	1.9
Tu	0949	0.2	0.1	W	1021	-0.3	-0.1
	1708	5.3	1.6		1723	6.5	2.0
	2154	3.7	1.1		2312	2.5	0.8
3	0311	5.7	1.7	18	0444	5.5	1.7
W	1032	0.5	0.2	Th	1110	0.4	0.1
	1747	5.5	1.7		1810	6.8	2.1
	2308	3.5	1.1				
4	0417	5.2	1.6	19	0027	1.9	0.6
Th	1118	0.9	0.3	F	0611	4.9	1.5
	1825	5.8	1.8		1159	1.2	0.4
					1854	7.1	2.2
5	0017	2.9	0.9	20	0137	1.2	0.4
F	0536	4.8	1.5	Sa	0738	4.6	1.4
	1202	1.3	0.4		1251	1.9	0.6
	1901	6.1	1.9		1936	7.3	2.2
6	0120	2.2	0.7	21	0236	0.5	0.2
Sa	0659	4.6	1.4	Su	0858	4.6	1.4
	1251	1.7	0.5		1343	2.5	0.8
	1933	6.5	2.0		2016	7.4	2.3
7	0218	1.3	0.4	22	0328	-0.1	0.0
Su	0820	4.7	1.4	M	1006	4.8	1.5
	1336	2.1	0.6		1435	3.0	0.9
	2007	7.0	2.1		2058	7.4	2.3
8	0304	0.4	0.1	23	0415	-0.5	-0.2
M	0930	4.8	1.5	Tu	1106	5.0	1.5
	1423	2.5	0.8		1524	3.3	1.0
	2043	7.4	2.3		2137	7.4	2.3
9	0353	-0.5	-0.2	24	0455	-0.8	-0.2
Tu	1031	5.1	1.6	W	1155	5.1	1.6
	1511	2.9	0.9		1611	3.5	1.1
	2122	7.8	2.4		2212	7.3	2.2
10	0441	-1.2	-0.4	25	0533	-0.9	-0.3
W	1128	5.3	1.6	Th	1237	5.2	1.6
	1559	3.1	0.9		1655	3.6	1.1
	2204	8.1	2.5		2250	7.2	2.2
11	0527	-1.8	-0.5	26	0610	-0.9	-0.3
Th	1223	5.5	1.7	F	1316	5.3	1.6
	1649	3.3	1.0		1737	3.6	1.1
	2250	8.3	2.5		2326	7.1	2.2
12	0613	-2.1	-0.6	27	0647	-0.8	-0.2
F	1312	5.6	1.7	Sa	1351	5.3	1.6
	1740	3.4	1.0		1812	3.6	1.1
	2339	8.4	2.6				
13	0703	-2.2	-0.7	28	0001	7.0	2.1
Sa	1403	5.7	1.7	Su	0721	-0.7	-0.2
	1835	3.4	1.0		1429	5.3	1.6
					1855	3.6	1.1
14	0028	8.2	2.5	29	0036	6.8	2.1
Su	0752	-2.0	-0.6	M	0757	-0.5	-0.2
	1453	5.8	1.8		1501	5.4	1.6
	1934	3.3	1.0		1941	3.5	1.1
15	0124	7.7	2.3	30	0115	6.5	2.0
M	0843	-1.6	-0.5	Tu	0832	-0.2	-0.1
	1544	5.9	1.8		1533	5.5	1.7
	2040	3.2	1.0		2030	3.4	1.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0157	6.1	1.9	16	0320	5.9	1.8
W	0907	0.1	0.0	Th	0942	0.3	0.1
	1605	5.6	1.7		1630	6.9	2.1
	2127	3.2	1.0		2249	1.7	0.5
2	0242	5.6	1.7	17	0433	5.1	1.6
Th	0940	0.5	0.2	F	1024	1.2	0.4
	1639	5.9	1.8		1715	7.0	2.1
	2229	2.9	0.9		2358	1.2	0.4
3	0347	5.1	1.6	18	0558	4.5	1.4
F	1021	1.1	0.3	Sa	1113	2.0	0.6
	1711	6.2	1.9		1802	7.1	2.2
	2335	2.3	0.7				
4	0501	4.6	1.4	19	0108	0.8	0.2
Sa	1059	1.6	0.5	Su	0730	4.3	1.3
	1747	6.5	2.0		1205	2.7	0.8
					1848	7.1	2.2
5	0037	1.6	0.5	20	0210	0.3	0.1
Su	0630	4.3	1.3	M	0856	4.4	1.3
	1148	2.2	0.7		1304	3.2	1.0
	1829	6.9	2.1		1938	7.1	2.2
6	0143	0.8	0.2	21	0306	0.0	0.0
M	0803	4.3	1.3	Tu	1002	4.7	1.4
	1240	2.7	0.8		1407	3.5	1.1
	1912	7.2	2.2		2026	7.0	2.1
7	0238	-0.1	0.0	22	0354	-0.3	-0.1
Tu	0921	4.5	1.4	W	1057	4.9	1.5
	1339	3.1	0.9		1505	3.6	1.1
	2002	7.6	2.3		2114	7.0	2.1
8	0331	-0.9	-0.3	23	0436	-0.5	-0.2
W	1027	4.9	1.5	Th	1139	5.1	1.6
	1439	3.4	1.0		1554	3.6	1.1
	2051	8.0	2.4		2156	7.1	2.2
9	0423	-1.5	-0.5	24	0515	-0.6	-0.2
Th	1123	5.2	1.6	F	1215	5.2	1.6
	1537	3.4	1.0		1640	3.5	1.1
	2143	8.3	2.5		2238	7.1	2.2
10	0512	-2.0	-0.6	25	0551	-0.7	-0.2
F	1211	5.4	1.6	Sa	1247	5.3	1.6
	1636	3.3	1.0		1720	3.4	1.0
	2238	8.4	2.6		2314	7.0	2.1
11	0602	-2.2	-0.7	26	0623	-0.7	-0.2
Sa	1257	5.7	1.7	Su	1318	5.4	1.6
	1732	3.1	0.9		1759	3.2	1.0
	2330	8.4	2.6		2349	6.9	2.1
12	0648	-2.1	-0.6	27	0655	-0.5	-0.2
Su	1341	5.9	1.8	M	1347	5.5	1.7
	1828	2.9	0.9		1841	3.1	0.9
13	0026	8.1	2.5	28	0024	6.7	2.0
M	0734	-1.8	-0.5	Tu	0724	-0.3	-0.1
	1421	6.2	1.9		1409	5.7	1.7
	1928	2.6	0.8		1923	2.9	0.9
14	0118	7.5	2.3	29	0103	6.4	2.0
Tu	0817	-1.3	-0.4	W	0753	0.0	0.0
	1506	6.4	2.0		1437	5.8	1.8
	2031	2.4	0.7		2009	2.6	0.8
15	0217	6.8	2.1	30	0141	6.0	1.8
W	0900	-0.5	-0.2	Th	0824	0.4	0.1
	1547	6.7	2.0		1501	6.1	1.9
	2137	2.0	0.6		2056	2.3	0.7
				31	0230	5.5	1.7
				F	0856	1.0	0.3
					1530	6.3	1.9
					2152	2.0	0.6

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0327	4.9	1.5	16	0547	4.4	1.3
Sa	0931	1.6	0.5	Su	1027	2.8	0.9
	1605	6.5	2.0		1703	6.8	2.1
	2252	1.5	0.5				
2	0443	4.4	1.3	17	0028	0.6	0.2
Su	1010	2.2	0.7	M	0725	4.3	1.3
	1645	6.7	2.0		1127	3.3	1.0
					1800	6.6	2.0
3	0001	1.0	0.3	18	0138	0.5	0.2
M	0619	4.2	1.3	Tu	0847	4.5	1.4
	1059	2.8	0.9		1239	3.6	1.1
	1734	7.0	2.1		1905	6.5	2.0
4	0107	0.3	0.1	19	0237	0.3	0.1
Tu	0757	4.2	1.3	W	0946	4.8	1.5
	1201	3.3	1.0		1351	3.7	1.1
	1832	7.2	2.2		2003	6.5	2.0
5	0213	-0.3	-0.1	20	0329	0.0	0.0
W	0921	4.5	1.4	Th	1032	5.0	1.5
	1314	3.5	1.1		1453	3.6	1.1
	1933	7.6	2.3		2059	6.6	2.0
6	0313	-0.9	-0.3	21	0411	-0.2	-0.1
Th	1020	4.9	1.5	F	1107	5.2	1.6
	1426	3.5	1.1		1544	3.3	1.0
	2038	7.9	2.4		2144	6.8	2.1
7	0407	-1.5	-0.5	22	0450	-0.3	-0.1
F	1107	5.3	1.6	Sa	1136	5.4	1.6
	1529	3.3	1.0		1627	3.0	0.9
	2137	8.1	2.5		2226	6.9	2.1
8	0456	-1.8	-0.5	23	0522	-0.3	-0.1
Sa	1146	5.7	1.7	Su	1204	5.6	1.7
	1631	2.9	0.9		1706	2.8	0.9
	2233	8.2	2.5		2302	6.8	2.1
9	0543	-1.8	-0.5	24	0551	-0.2	-0.1
Su	1227	6.0	1.8	M	1229	5.7	1.7
	1728	2.4	0.7		1744	2.4	0.7
	2329	8.1	2.5		2337	6.7	2.0
10	0625	-1.6	-0.5	25	0619	-0.1	0.0
M	1303	6.4	2.0	Tu	1251	5.9	1.8
	1822	2.0	0.6		1823	2.1	0.6
11	0021	7.7	2.3	26	0015	6.5	2.0
Tu	0703	-1.1	-0.3	W	0648	0.2	0.1
	1341	6.7	2.0		1313	6.1	1.9
	1917	1.6	0.5		1903	1.8	0.5
12	0116	7.1	2.2	27	0052	6.2	1.9
W	0745	-0.4	-0.1	Th	0713	0.7	0.2
	1417	6.9	2.1		1334	6.3	1.9
	2014	1.3	0.4		1942	1.5	0.5
13	0209	6.3	1.9	28	0134	5.8	1.8
Th	0822	0.4	0.1	F	0745	1.2	0.4
	1456	7.1	2.2		1402	6.5	2.0
	2114	1.0	0.3		2029	1.2	0.4
14	0311	5.5	1.7	29	0225	5.3	1.6
F	0900	1.2	0.4	Sa	0814	1.7	0.5
	1535	7.1	2.2		1431	6.7	2.0
	2214	0.9	0.3		2118	0.9	0.3
15	0423	4.8	1.5	30	0323	4.8	1.5
Sa	0941	2.0	0.6	Su	0849	2.3	0.7
	1617	6.9	2.1		1507	6.8	2.1
	2319	0.8	0.2		2220	0.7	0.2
				31	0440	4.4	1.3
				M	0931	2.9	0.9
					1553	6.9	2.1
					2329	0.4	0.1

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0618	4.3	1.3	16	0054	0.7	0.2
Tu	1027	3.4	1.0	W	0820	4.7	1.4
	1653	6.9	2.1		1221	3.8	1.2
					1828	5.9	1.8
2	0042	0.0	0.0	17	0157	0.6	0.2
W	0758	4.4	1.3	Th	0911	5.0	1.5
	1146	3.7	1.1		1341	3.7	1.1
	1805	7.0	2.1		1939	6.0	1.8
3	0151	-0.4	-0.1	18	0250	0.4	0.1
Th	0904	4.8	1.5	F	0951	5.2	1.6
	1312	3.6	1.1		1441	3.3	1.0
	1924	7.2	2.2		2036	6.2	1.9
4	0252	-0.8	-0.2	19	0333	0.3	0.1
F	0956	5.3	1.6	Sa	1021	5.5	1.7
	1428	3.3	1.0		1529	2.9	0.9
	2033	7.5	2.3		2125	6.3	1.9
5	0345	-1.1	-0.3	20	0409	0.2	0.1
Sa	1035	5.7	1.7	Su	1050	5.7	1.7
	1533	2.7	0.8		1610	2.4	0.7
	2135	7.7	2.3		2211	6.4	2.0
6	0433	-1.2	-0.4	21	0441	0.3	0.1
Su	1112	6.2	1.9	M	1113	6.0	1.8
	1628	2.0	0.6		1649	1.9	0.6
	2231	7.7	2.3		2249	6.4	2.0
7	0517	-1.0	-0.3	22	0510	0.5	0.2
M	1145	6.6	2.0	Tu	1133	6.2	1.9
	1724	1.4	0.4		1725	1.4	0.4
	2327	7.5	2.3		2328	6.3	1.9
8	0553	-0.6	-0.2	23	0540	0.7	0.2
Tu	1220	6.9	2.1	W	1155	6.5	2.0
	1815	0.8	0.2		1803	1.0	0.3
9	0019	7.1	2.2	24	0009	6.1	1.9
W	0631	0.0	0.0	Th	0605	1.1	0.3
	1252	7.2	2.2		1217	6.7	2.0
	1903	0.4	0.1		1839	0.6	0.2
10	0111	6.5	2.0	25	0051	5.9	1.8
Th	0707	0.7	0.2	F	0637	1.6	0.5
	1326	7.3	2.2		1242	6.9	2.1
	1953	0.2	0.1		1921	0.2	0.1
11	0206	5.9	1.8	26	0137	5.6	1.7
F	0745	1.5	0.5	Sa	0706	2.1	0.6
	1401	7.2	2.2		1309	7.1	2.2
	2042	0.2	0.1		2006	0.0	0.0
12	0303	5.3	1.6	27	0230	5.2	1.6
Sa	0821	2.2	0.7	Su	0741	2.6	0.8
	1435	7.0	2.1		1342	7.1	2.2
	2138	0.3	0.1		2055	-0.1	0.0
13	0413	4.8	1.5	28	0331	4.8	1.5
Su	0902	2.9	0.9	M	0817	3.1	0.9
	1518	6.7	2.0		1425	7.1	2.2
	2237	0.5	0.2		2154	-0.1	0.0
14	0530	4.5	1.4	29	0454	4.6	1.4
M	0951	3.4	1.0	Tu	0909	3.5	1.1
	1605	6.4	2.0		1518	6.9	2.1
	2343	0.6	0.2		2305	-0.1	0.0
15	0706	4.5	1.4	30	0627	4.6	1.4
Tu	1100	3.7	1.1	W	1021	3.8	1.2
	1711	6.1	1.9		1628	6.7	2.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HUMBOLDT BAY, CALIFORNIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0018	-0.2	-0.1	16	0106	0.8	0.2
Th	0743	4.9	1.5	F	0823	5.2	1.6
	1154	3.8	1.2		1321	3.5	1.1
	1753	6.6	2.0		1858	5.5	1.7
2	0127	-0.3	-0.1	17	0159	0.8	0.2
F	0839	5.3	1.6	Sa	0857	5.5	1.7
	1323	3.4	1.0		1421	3.0	0.9
	1919	6.7	2.0		2004	5.6	1.7
3	0226	-0.4	-0.1	18	0241	0.8	0.2
Sa	0920	5.8	1.8	Su	0927	5.8	1.8
	1435	2.7	0.8		1507	2.4	0.7
	2031	6.8	2.1		2103	5.7	1.7
4	0317	-0.4	-0.1	19	0319	0.9	0.3
Su	0956	6.3	1.9	M	0954	6.2	1.9
	1533	1.8	0.5		1549	1.7	0.5
	2134	6.9	2.1		2152	5.8	1.8
5	0400	-0.2	-0.1	20	0352	1.1	0.3
M	1030	6.8	2.1	Tu	1017	6.5	2.0
	1626	1.0	0.3		1628	1.0	0.3
	2233	6.8	2.1		2237	5.8	1.8
6	0441	0.2	0.1	21	0426	1.4	0.4
Tu	1103	7.2	2.2	W	1038	6.8	2.1
	1715	0.3	0.1		1703	0.4	0.1
	2326	6.6	2.0		2320	5.8	1.8
7	0518	0.7	0.2	22	0454	1.7	0.5
W	1135	7.5	2.3	Th	1102	7.1	2.2
	1800	-0.3	-0.1		1742	-0.2	-0.1
8	0018	6.3	1.9	23	0006	5.8	1.8
Th	0555	1.3	0.4	F	0527	2.1	0.6
	1207	7.6	2.3		1129	7.3	2.2
	1845	-0.5	-0.2		1823	-0.6	-0.2
9	0110	6.0	1.8	24	0052	5.6	1.7
F	0631	1.9	0.6	Sa	0558	2.5	0.8
	1237	7.5	2.3		1157	7.5	2.3
	1928	-0.6	-0.2		1904	-0.9	-0.3
10	0203	5.6	1.7	25	0141	5.4	1.6
Sa	0709	2.5	0.8	Su	0637	2.9	0.9
	1309	7.3	2.2		1232	7.6	2.3
	2013	-0.4	-0.1		1948	-1.0	-0.3
11	0259	5.2	1.6	26	0237	5.2	1.6
Su	0745	3.0	0.9	M	0716	3.2	1.0
	1344	6.9	2.1		1312	7.5	2.3
	2102	-0.1	0.0		2040	-0.9	-0.3
12	0402	4.9	1.5	27	0343	5.0	1.5
M	0830	3.5	1.1	Tu	0804	3.6	1.1
	1422	6.5	2.0		1400	7.3	2.2
	2154	0.2	0.1		2139	-0.7	-0.2
13	0517	4.7	1.4	28	0455	5.0	1.5
Tu	0922	3.8	1.2	W	0907	3.8	1.2
	1512	6.1	1.9		1459	6.9	2.1
	2257	0.5	0.2		2245	-0.5	-0.2
14	0630	4.8	1.5	29	0608	5.2	1.6
W	1036	4.0	1.2	Th	1034	3.8	1.2
	1616	5.7	1.7		1618	6.5	2.0
					2351	-0.3	-0.1
15	0002	0.7	0.2	30	0709	5.5	1.7
Th	0738	4.9	1.5	F	1205	3.5	1.1
	1203	3.9	1.2		1747	6.1	1.9
	1739	5.5	1.7				
				31	0054	0.0	0.0
				Sa	0756	6.0	1.8
					1330	2.7	0.8
					1913	6.0	1.8

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0149	0.2	0.1	16	0135	1.4	0.4
Su	0838	6.5	2.0	M	0822	6.2	1.9
	1436	1.8	0.5		1441	1.9	0.6
	2029	5.9	1.8		2034	5.0	1.5
2	0238	0.6	0.2	17	0219	1.7	0.5
M	0913	7.0	2.1	Tu	0849	6.6	2.0
	1529	0.9	0.3		1523	1.1	0.3
	2137	5.9	1.8		2132	5.1	1.6
3	0324	1.0	0.3	18	0258	2.0	0.6
Tu	0950	7.4	2.3	W	0918	6.9	2.1
	1619	0.0	0.0		1604	0.3	0.1
	2235	5.9	1.8		2227	5.3	1.6
4	0406	1.5	0.5	19	0337	2.3	0.7
W	1022	7.7	2.3	Th	0946	7.3	2.2
	1703	-0.6	-0.2		1643	-0.5	-0.2
	2331	5.8	1.8		2316	5.4	1.6
5	0444	2.0	0.6	20	0415	2.6	0.8
Th	1054	7.8	2.4	F	1017	7.6	2.3
	1748	-1.0	-0.3		1723	-1.0	-0.3
6	0021	5.7	1.7	21	0006	5.5	1.7
F	0523	2.5	0.8	Sa	0451	2.9	0.9
	1126	7.7	2.3		1050	7.9	2.4
	1827	-1.1	-0.3		1805	-1.5	-0.5
7	0110	5.6	1.7	22	0054	5.5	1.7
Sa	0558	2.9	0.9	Su	0533	3.1	0.9
	1157	7.5	2.3		1128	8.0	2.4
	1906	-1.0	-0.3		1850	-1.7	-0.5
8	0201	5.4	1.6	23	0145	5.5	1.7
Su	0637	3.3	1.0	M	0615	3.3	1.0
	1230	7.2	2.2		1211	8.0	2.4
	1948	-0.8	-0.2		1938	-1.7	-0.5
9	0251	5.2	1.6	24	0239	5.4	1.6
M	0719	3.6	1.1	Tu	0707	3.5	1.1
	1303	6.9	2.1		1259	7.8	2.4
	2033	-0.4	-0.1		2030	-1.5	-0.5
10	0343	5.1	1.6	25	0338	5.4	1.6
Tu	0804	3.8	1.2	W	0803	3.6	1.1
	1344	6.5	2.0		1351	7.4	2.3
	2118	-0.1	0.0		2123	-1.1	-0.3
11	0445	5.0	1.5	26	0437	5.5	1.7
W	0854	3.9	1.2	Th	0918	3.6	1.1
	1428	6.1	1.9		1453	6.8	2.1
	2211	0.3	0.1		2220	-0.7	-0.2
12	0546	5.0	1.5	27	0532	5.8	1.8
Th	1010	4.0	1.2	F	1040	3.3	1.0
	1527	5.6	1.7		1609	6.1	1.9
	2307	0.6	0.2		2313	-0.1	0.0
13	0639	5.2	1.6	28	0624	6.2	1.9
F	1129	3.8	1.2	Sa	1206	2.8	0.9
	1646	5.3	1.6		1739	5.5	1.7
14	0000	0.9	0.3	29	0011	0.5	0.2
Sa	0721	5.5	1.7	Su	0710	6.7	2.0
	1246	3.3	1.0		1322	1.9	0.6
	1809	5.0	1.5		1908	5.2	1.6
15	0050	1.1	0.3	30	0105	1.1	0.3
Su	0754	5.8	1.8	M	0754	7.1	2.2
	1349	2.7	0.8		1426	1.0	0.3
	1928	5.0	1.5		2031	5.1	1.6

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0156	1.6	0.5	16	0113	2.3	0.7
Tu	0831	7.4	2.3	W	0747	6.8	2.1
	1523	0.1	0.0		1451	0.6	0.2
	2142	5.1	1.6		2120	4.6	1.4
2	0244	2.2	0.7	17	0202	2.7	0.8
W	0909	7.7	2.3	Th	0826	7.2	2.2
	1609	-0.5	-0.2		1536	-0.2	-0.1
	2243	5.3	1.6		2219	4.9	1.5
3	0330	2.6	0.8	18	0249	3.0	0.9
Th	0947	7.8	2.4	F	0903	7.6	2.3
	1651	-1.0	-0.3		1622	-1.0	-0.3
	2337	5.4	1.6		2315	5.1	1.6
4	0415	3.0	0.9	19	0337	3.2	1.0
F	1022	7.7	2.3	Sa	0944	7.9	2.4
	1733	-1.2	-0.4		1707	-1.5	-0.5
5	0025	5.4	1.6	20	0003	5.3	1.6
Sa	0457	3.3	1.0	Su	0425	3.3	1.0
	1056	7.6	2.3		1030	8.2	2.5
	1811	-1.2	-0.4		1753	-1.9	-0.6
6	0111	5.4	1.6	21	0049	5.5	1.7
Su	0536	3.5	1.1	M	0515	3.4	1.0
	1131	7.4	2.3		1112	8.3	2.5
	1850	-1.1	-0.3		1839	-2.1	-0.6
7	0157	5.4	1.6	22	0138	5.6	1.7
M	0618	3.6	1.1	Tu	0608	3.3	1.0
	1207	7.2	2.2		1205	8.2	2.5
	1929	-0.9	-0.3		1927	-2.0	-0.6
8	0239	5.3	1.6	23	0223	5.7	1.7
Tu	0700	3.7	1.1	W	0703	3.2	1.0
	1242	6.9	2.1		1254	7.9	2.4
	2008	-0.6	-0.2		2013	-1.7	-0.5
9	0321	5.3	1.6	24	0309	5.9	1.8
W	0747	3.8	1.2	Th	0806	3.1	0.9
	1321	6.6	2.0		1349	7.3	2.2
	2047	-0.3	-0.1		2059	-1.2	-0.4
10	0403	5.3	1.6	25	0357	6.2	1.9
Th	0837	3.8	1.2	F	0914	2.9	0.9
	1403	6.1	1.9		1451	6.6	2.0
	2129	0.1	0.0		2145	-0.5	-0.2
11	0445	5.3	1.6	26	0443	6.5	2.0
F	0939	3.7	1.1	Sa	1028	2.5	0.8
	1451	5.7	1.7		1604	5.7	1.7
	2212	0.5	0.2		2236	0.3	0.1
12	0527	5.5	1.7	27	0532	6.8	2.1
Sa	1047	3.4	1.0	Su	1147	1.9	0.6
	1557	5.1	1.6		1730	5.0	1.5
	2254	0.9	0.3		2325	1.2	0.4
13	0604	5.8	1.8	28	0617	7.1	2.2
Su	1201	2.9	0.9	M	1303	1.2	0.4
	1713	4.7	1.4		1904	4.6	1.4
	2339	1.4	0.4				
14	0637	6.1	1.9	29	0018	1.9	0.6
M	1305	2.3	0.7	Tu	0706	7.3	2.2
	1842	4.4	1.3		1409	0.5	0.2
					2034	4.5	1.4
15	0024	1.9	0.6	30	0113	2.6	0.8
Tu	0713	6.4	2.0	W	0751	7.4	2.3
	1402	1.4	0.4		1505	-0.2	-0.1
	2007	4.4	1.3		2150	4.7	1.4
				31	0210	3.1	0.9
				Th	0834	7.5	2.3
					1556	-0.6	-0.2
					2249	5.0	1.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0240	8.0	2.4	16	0245	7.6	2.3
Th	0754	3.3	1.0	F	0803	3.6	1.1
	1338	10.2	3.1		1339	8.9	2.7
	2057	-1.5	-0.5		2048	-0.1	0.0
2	0329	8.2	2.5	17	0317	7.7	2.3
F	0847	3.1	0.9	Sa	0842	3.4	1.0
	1433	9.8	3.0		1417	8.8	2.7
	2140	-1.2	-0.4		2117	0.0	0.0
3	0411	8.4	2.6	18	0345	7.9	2.4
Sa	0945	2.9	0.9	Su	0920	3.2	1.0
	1525	9.3	2.8		1456	8.5	2.6
	2225	-0.6	-0.2		2142	0.3	0.1
4	0456	8.6	2.6	19	0414	8.1	2.5
Su	1043	2.7	0.8	M	0959	2.9	0.9
	1624	8.5	2.6		1538	8.1	2.5
	2307	0.1	0.0		2211	0.7	0.2
5	0542	8.7	2.7	20	0441	8.3	2.5
M	1144	2.5	0.8	Tu	1047	2.6	0.8
	1726	7.7	2.3		1627	7.5	2.3
	2353	1.0	0.3		2243	1.2	0.4
6	0626	8.8	2.7	21	0516	8.5	2.6
Tu	1249	2.2	0.7	W	1139	2.3	0.7
	1835	6.9	2.1		1726	6.8	2.1
					2321	1.9	0.6
7	0038	1.8	0.5	22	0553	8.7	2.7
W	0712	8.8	2.7	Th	1242	2.0	0.6
	1357	1.9	0.6		1842	6.2	1.9
	1949	6.4	2.0				
8	0127	2.6	0.8	23	0007	2.6	0.8
Th	0757	8.9	2.7	F	0638	8.9	2.7
	1503	1.4	0.4		1355	1.5	0.5
	2106	6.2	1.9		2014	5.9	1.8
9	0222	3.2	1.0	24	0106	3.3	1.0
F	0846	8.9	2.7	Sa	0735	9.0	2.7
	1603	0.9	0.3		1511	0.9	0.3
	2216	6.4	2.0		2140	6.1	1.9
10	0321	3.6	1.1	25	0218	3.9	1.2
Sa	0932	8.9	2.7	Su	0838	9.2	2.8
	1659	0.4	0.1		1622	0.1	0.0
	2317	6.6	2.0		2256	6.5	2.0
11	0417	3.9	1.2	26	0337	4.0	1.2
Su	1016	8.9	2.7	M	0941	9.4	2.9
	1746	0.1	0.0		1725	-0.5	-0.2
					2357	7.0	2.1
12	0010	6.9	2.1	27	0450	3.9	1.2
M	0511	4.0	1.2	Tu	1045	9.7	3.0
	1101	8.9	2.7		1818	-1.1	-0.3
	1829	-0.1	0.0				
13	0055	7.2	2.2	28	0047	7.5	2.3
Tu	0559	4.0	1.2	W	0554	3.5	1.1
	1143	8.9	2.7		1145	9.9	3.0
	1908	-0.3	-0.1		1908	-1.4	-0.4
14	0134	7.4	2.3	29	0136	7.9	2.4
W	0644	3.9	1.2	Th	0654	3.0	0.9
	1221	8.9	2.7		1243	10.0	3.0
	1944	-0.3	-0.1		1953	-1.5	-0.5
15	0213	7.5	2.3	30	0218	8.3	2.5
Th	0724	3.7	1.1	F	0748	2.6	0.8
	1300	8.9	2.7		1335	9.9	3.0
	2016	-0.2	-0.1		2036	-1.3	-0.4
				31	0259	8.6	2.6
				Sa	0840	2.1	0.6
					1428	9.5	2.9
					2115	-0.8	-0.2

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0338	8.9	2.7	16	0303	8.3	2.5
Su	0930	1.8	0.5	M	0901	1.9	0.6
	1518	9.0	2.7		1449	8.2	2.5
	2152	-0.2	-0.1		2111	0.5	0.2
2	0414	9.0	2.7	17	0327	8.6	2.6
M	1019	1.6	0.5	Tu	0940	1.5	0.5
	1609	8.2	2.5		1532	7.8	2.4
	2228	0.5	0.2		2138	1.0	0.3
3	0451	9.0	2.7	18	0354	8.8	2.7
Tu	1115	1.5	0.5	W	1021	1.2	0.4
	1705	7.4	2.3		1620	7.2	2.2
	2306	1.4	0.4		2210	1.6	0.5
4	0528	8.9	2.7	19	0425	9.0	2.7
W	1209	1.5	0.5	Th	1111	1.1	0.3
	1807	6.6	2.0		1718	6.6	2.0
	2345	2.3	0.7		2245	2.3	0.7
5	0608	8.7	2.7	20	0502	9.0	2.7
Th	1309	1.5	0.5	F	1209	1.0	0.3
	1918	6.1	1.9		1835	6.0	1.8
					2334	3.0	0.9
6	0030	3.1	0.9	21	0551	8.9	2.7
F	0654	8.4	2.6	Sa	1326	0.9	0.3
	1418	1.4	0.4		2005	5.7	1.7
	2037	5.9	1.8				
7	0130	3.7	1.1	22	0038	3.7	1.1
Sa	0746	8.2	2.5	Su	0654	8.7	2.7
	1529	1.1	0.3		1448	0.6	0.2
	2155	6.0	1.8		2133	5.9	1.8
8	0242	4.1	1.2	23	0206	4.1	1.2
Su	0844	8.0	2.4	M	0811	8.6	2.6
	1629	0.8	0.2		1608	0.1	0.0
	2256	6.4	2.0		2243	6.4	2.0
9	0351	4.2	1.3	24	0336	3.9	1.2
M	0944	8.1	2.5	Tu	0934	8.7	2.7
	1722	0.4	0.1		1711	-0.5	-0.2
	2348	6.7	2.0		2338	7.0	2.1
10	0451	4.0	1.2	25	0450	3.4	1.0
Tu	1038	8.2	2.5	W	1043	9.0	2.7
	1806	0.1	0.0		1802	-0.9	-0.3
11	0030	7.1	2.2	26	0025	7.6	2.3
W	0542	3.7	1.1	Th	0551	2.7	0.8
	1127	8.4	2.6		1144	9.3	2.8
	1845	-0.1	0.0		1849	-1.0	-0.3
12	0108	7.3	2.2	27	0107	8.1	2.5
Th	0628	3.3	1.0	F	0648	2.0	0.6
	1210	8.6	2.6		1241	9.4	2.9
	1920	-0.2	-0.1		1929	-1.0	-0.3
13	0140	7.6	2.3	28	0145	8.6	2.6
F	0711	3.0	0.9	Sa	0737	1.4	0.4
	1251	8.7	2.7		1330	9.2	2.8
	1949	-0.2	-0.1		2006	-0.7	-0.2
14	0209	7.8	2.4				
Sa	0750	2.6	0.8				
	1330	8.7	2.7				
	2017	-0.1	0.0				
15	0237	8.1	2.5				
Su	0825	2.3	0.7				
	1409	8.5	2.6				
	2045	0.2	0.1				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0221	8.9	2.7	16	0151	8.4	2.6
Su	0826	0.9	0.3	M	0805	0.9	0.3
	1419	8.9	2.7		1403	8.1	2.5
	2042	-0.2	-0.1		2009	0.7	0.2
2	0255	9.1	2.8	17	0215	8.7	2.7
M	0911	0.6	0.2	Tu	0842	0.4	0.1
	1506	8.4	2.6		1443	7.8	2.4
	2117	0.5	0.2		2039	1.1	0.3
3	0327	9.1	2.8	18	0242	9.0	2.7
Tu	0955	0.4	0.1	W	0921	0.1	0.0
	1554	7.7	2.3		1529	7.4	2.3
	2148	1.2	0.4		2109	1.6	0.5
4	0358	9.0	2.7	19	0311	9.1	2.8
W	1039	0.5	0.2	Th	1002	-0.1	0.0
	1644	7.1	2.2		1621	6.9	2.1
	2224	2.0	0.6		2145	2.2	0.7
5	0430	8.7	2.7	20	0346	9.1	2.8
Th	1128	0.7	0.2	F	1049	0.0	0.0
	1740	6.4	2.0		1721	6.4	2.0
	2302	2.7	0.8		2225	2.8	0.9
6	0505	8.3	2.5	21	0427	8.9	2.7
F	1223	1.0	0.3	Sa	1151	0.2	0.1
	1846	5.9	1.8		1835	5.9	1.8
	2345	3.4	1.0		2319	3.4	1.0
7	0547	7.9	2.4	22	0523	8.5	2.6
Sa	1329	1.2	0.4	Su	1307	0.4	0.1
	2007	5.7	1.7		2000	5.8	1.8
8	0047	3.9	1.2	23	0039	3.8	1.2
Su	0645	7.5	2.3	M	0637	8.1	2.5
	1442	1.2	0.4		1430	0.3	0.1
	2121	5.8	1.8		2118	6.2	1.9
9	0207	4.2	1.3	24	0214	3.8	1.2
M	0758	7.3	2.2	Tu	0806	7.9	2.4
	1552	1.0	0.3		1547	0.1	0.0
	2226	6.2	1.9		2221	6.7	2.0
10	0325	4.0	1.2	25	0339	3.3	1.0
Tu	0912	7.3	2.2	W	0932	8.0	2.4
	1648	0.7	0.2		1645	-0.2	-0.1
	2314	6.6	2.0		2311	7.4	2.3
11	0429	3.6	1.1	26	0448	2.5	0.8
W	1016	7.6	2.3	Th	1042	8.3	2.5
	1733	0.4	0.1		1735	-0.4	-0.1
	2354	7.0	2.1		2352	8.0	2.4
12	0522	3.1	0.9	27	0545	1.6	0.5
Th	1109	7.9	2.4	F	1140	8.5	2.6
	1810	0.2	0.1		1816	-0.4	-0.1
13	0026	7.4	2.3	28	0031	8.5	2.6
F	0608	2.5	0.8	Sa	0636	0.8	0.2
	1154	8.1	2.5		1233	8.5	2.6
	1843	0.1	0.0		1858	-0.1	0.0
14	0057	7.7	2.3	29	0106	8.9	2.7
Sa	0650	1.9	0.6	Su	0724	0.2	0.1
	1239	8.2	2.5		1322	8.4	2.6
	1914	0.2	0.1		1931	0.3	0.1
15	0126	8.1	2.5	30	0140	9.1	2.8
Su	0728	1.4	0.4	M	0806	-0.2	-0.1
	1321	8.2	2.5		1409	8.1	2.5
	1940	0.4	0.1		2009	0.8	0.2
				31	0209	9.1	2.8
				Tu	0849	-0.4	-0.1
					1455	7.7	2.3
					2041	1.4	0.4

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0240	9.0	2.7	16	0204	9.3	2.8
W	0928	-0.4	-0.1	Th	0906	-1.0	-0.3
	1540	7.3	2.2		1530	7.1	2.2
	2114	2.0	0.6		2050	2.4	0.7
2	0307	8.8	2.7	17	0238	9.3	2.8
Th	1007	-0.2	-0.1	F	0951	-1.0	-0.3
	1628	6.8	2.1		1625	6.8	2.1
	2148	2.6	0.8		2130	2.9	0.9
3	0337	8.5	2.6	18	0321	9.1	2.8
F	1049	0.2	0.1	Sa	1043	-0.7	-0.2
	1718	6.3	1.9		1726	6.5	2.0
	2227	3.2	1.0		2222	3.3	1.0
4	0411	8.0	2.4	19	0410	8.7	2.7
Sa	1137	0.6	0.2	Su	1142	-0.4	-0.1
	1822	6.0	1.8		1835	6.3	1.9
	2313	3.6	1.1		2329	3.6	1.1
5	0454	7.6	2.3	20	0513	8.1	2.5
Su	1236	1.0	0.3	M	1254	0.0	0.0
	1929	5.8	1.8		1947	6.4	2.0
6	0016	4.0	1.2	21	0053	3.6	1.1
M	0549	7.1	2.2	Tu	0635	7.6	2.3
	1348	1.2	0.4		1409	0.2	0.1
	2041	5.9	1.8		2053	6.8	2.1
7	0137	4.0	1.2	22	0221	3.2	1.0
Tu	0712	6.8	2.1	W	0808	7.3	2.2
	1457	1.2	0.4		1514	0.2	0.1
	2139	6.2	1.9		2149	7.4	2.3
8	0258	3.7	1.1	23	0337	2.4	0.7
W	0838	6.7	2.0	Th	0927	7.4	2.3
	1555	1.0	0.3		1610	0.3	0.1
	2226	6.7	2.0		2234	8.0	2.4
9	0401	3.1	0.9	24	0440	1.5	0.5
Th	0947	7.0	2.1	F	1034	7.5	2.3
	1642	0.8	0.2		1658	0.4	0.1
	2304	7.2	2.2		2315	8.5	2.6
10	0457	2.4	0.7	25	0535	0.6	0.2
F	1043	7.3	2.2	Sa	1131	7.6	2.3
	1719	0.8	0.2		1741	0.6	0.2
	2336	7.6	2.3		2351	8.9	2.7
11	0542	1.6	0.5	26	0621	-0.1	0.0
Sa	1135	7.5	2.3	Su	1223	7.7	2.3
	1754	0.8	0.2		1820	1.0	0.3
12	0007	8.1	2.5	27	0024	9.1	2.8
Su	0623	0.9	0.3	M	0706	-0.6	-0.2
	1221	7.6	2.3		1312	7.6	2.3
	1829	1.0	0.3		1856	1.5	0.5
13	0033	8.5	2.6	28	0056	9.1	2.8
M	0703	0.2	0.1	Tu	0745	-0.9	-0.3
	1307	7.7	2.3		1359	7.4	2.3
	1901	1.3	0.4		1933	2.0	0.6
14	0102	8.8	2.7	29	0126	9.0	2.7
Tu	0742	-0.4	-0.1	W	0827	-0.9	-0.3
	1354	7.6	2.3		1444	7.2	2.2
	1935	1.6	0.5		2009	2.4	0.7
15	0130	9.1	2.8	30	0157	8.8	2.7
W	0824	-0.8	-0.2	Th	0904	-0.8	-0.2
	1441	7.4	2.3		1527	7.0	2.1
	2009	2.0	0.6		2045	2.8	0.9

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0225	8.6	2.6	16	0217	9.4	2.9
F	0940	-0.5	-0.2	Sa	0943	-1.5	-0.5
	1612	6.7	2.0		1625	7.0	2.1
	2122	3.2	1.0		2127	3.2	1.0
2	0257	8.3	2.5	17	0309	9.1	2.8
Sa	1020	-0.2	-0.1	Su	1035	-1.2	-0.4
	1702	6.4	2.0		1721	6.9	2.1
	2204	3.5	1.1		2230	3.3	1.0
3	0333	7.9	2.4	18	0406	8.5	2.6
Su	1102	0.3	0.1	M	1133	-0.7	-0.2
	1755	6.2	1.9		1822	6.9	2.1
	2252	3.7	1.1		2339	3.3	1.0
4	0418	7.4	2.3	19	0517	7.9	2.4
M	1153	0.7	0.2	Tu	1235	-0.2	-0.1
	1850	6.1	1.9		1921	7.2	2.2
	2352	3.9	1.2				
5	0517	7.0	2.1	20	0054	3.0	0.9
Tu	1251	1.0	0.3	W	0636	7.3	2.2
	1949	6.3	1.9		1336	0.2	0.1
					2018	7.6	2.3
6	0106	3.8	1.2	21	0213	2.4	0.7
W	0630	6.6	2.0	Th	0759	6.9	2.1
	1351	1.2	0.4		1435	0.6	0.2
	2041	6.6	2.0		2106	8.1	2.5
7	0223	3.4	1.0	22	0325	1.6	0.5
Th	0756	6.4	2.0	F	0915	6.8	2.1
	1448	1.3	0.4		1527	1.0	0.3
	2126	7.0	2.1		2152	8.5	2.6
8	0329	2.7	0.8	23	0424	0.7	0.2
F	0912	6.4	2.0	Sa	1021	6.8	2.1
	1537	1.3	0.4		1616	1.3	0.4
	2205	7.5	2.3		2232	8.9	2.7
9	0424	1.8	0.5	24	0517	-0.1	0.0
Sa	1014	6.6	2.0	Su	1119	6.9	2.1
	1619	1.5	0.5		1701	1.7	0.5
	2237	8.0	2.4		2309	9.1	2.8
10	0512	0.9	0.3	25	0605	-0.6	-0.2
Su	1111	6.9	2.1	M	1214	7.0	2.1
	1701	1.7	0.5		1743	2.2	0.7
	2311	8.5	2.6		2343	9.1	2.8
11	0555	0.1	0.0	26	0647	-1.0	-0.3
M	1204	7.0	2.1	Tu	1303	7.0	2.1
	1743	1.9	0.6		1825	2.5	0.8
	2343	8.9	2.7				
12	0641	-0.7	-0.2	27	0018	9.0	2.7
Tu	1257	7.2	2.2	W	0729	-1.1	-0.3
	1823	2.2	0.7		1351	7.0	2.1
					1905	2.9	0.9
13	0016	9.3	2.8	28	0050	8.8	2.7
W	0723	-1.2	-0.4	Th	0808	-1.0	-0.3
	1347	7.2	2.2		1431	6.9	2.1
	1904	2.5	0.8		1943	3.1	0.9
14	0055	9.5	2.9	29	0122	8.6	2.6
Th	0808	-1.6	-0.5	F	0843	-0.9	-0.3
	1439	7.2	2.2		1516	6.8	2.1
	1947	2.8	0.9		2024	3.3	1.0
15	0135	9.5	2.9	30	0157	8.4	2.6
F	0853	-1.6	-0.5	Sa	0919	-0.6	-0.2
	1529	7.1	2.2		1558	6.7	2.0
	2035	3.0	0.9		2103	3.5	1.1
				31	0232	8.1	2.5
				Su	0956	-0.3	-0.1
					1639	6.6	2.0
					2145	3.5	1.1

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0311	7.9	2.4	16	0406	8.4	2.6
M	1035	0.0	0.0	Tu	1115	-0.9	-0.3
	1724	6.6	2.0		1753	7.6	2.3
	2233	3.6	1.1		2333	2.5	0.8
2	0356	7.5	2.3	17	0512	7.6	2.3
Tu	1113	0.3	0.1	W	1205	-0.2	-0.1
	1808	6.6	2.0		1843	7.9	2.4
	2328	3.5	1.1				
3	0448	7.0	2.1	18	0042	2.1	0.6
W	1156	0.7	0.2	Th	0624	6.9	2.1
	1853	6.8	2.1		1253	0.4	0.1
					1932	8.1	2.5
4	0031	3.3	1.0	19	0154	1.6	0.5
Th	0557	6.5	2.0	F	0742	6.4	2.0
	1243	1.0	0.3		1346	1.1	0.3
	1935	7.1	2.2		2021	8.4	2.6
5	0141	2.8	0.9	20	0303	0.9	0.3
F	0713	6.1	1.9	Sa	0859	6.1	1.9
	1335	1.4	0.4		1441	1.7	0.5
	2020	7.5	2.3		2104	8.6	2.6
6	0245	2.1	0.6	21	0404	0.2	0.1
Sa	0833	6.0	1.8	Su	1008	6.1	1.9
	1424	1.8	0.5		1533	2.2	0.7
	2059	7.9	2.4		2150	8.8	2.7
7	0345	1.3	0.4	22	0458	-0.3	-0.1
Su	0945	6.1	1.9	M	1109	6.3	1.9
	1517	2.1	0.6		1622	2.6	0.8
	2138	8.4	2.6		2229	8.8	2.7
8	0437	0.4	0.1	23	0546	-0.7	-0.2
M	1050	6.3	1.9	Tu	1204	6.5	2.0
	1606	2.5	0.8		1712	2.9	0.9
	2217	8.8	2.7		2308	8.7	2.7
9	0530	-0.5	-0.2	24	0629	-1.0	-0.3
Tu	1151	6.5	2.0	W	1251	6.6	2.0
	1658	2.8	0.9		1759	3.1	0.9
	2259	9.2	2.8		2348	8.6	2.6
10	0618	-1.2	-0.4	25	0711	-1.0	-0.3
W	1247	6.8	2.1	Th	1336	6.7	2.0
	1750	3.0	0.9		1845	3.2	1.0
	2341	9.5	2.9				
11	0707	-1.7	-0.5	26	0025	8.5	2.6
Th	1339	6.9	2.1	F	0751	-1.0	-0.3
	1842	3.1	0.9		1418	6.8	2.1
					1927	3.3	1.0
12	0030	9.6	2.9	27	0102	8.3	2.5
F	0756	-1.9	-0.6	Sa	0827	-0.9	-0.3
	1432	7.1	2.2		1500	6.8	2.1
	1934	3.1	0.9		2007	3.3	1.0
13	0119	9.6	2.9	28	0141	8.2	2.5
Sa	0845	-2.0	-0.6	Su	0902	-0.7	-0.2
	1524	7.2	2.2		1535	6.8	2.1
	2029	3.0	0.9		2050	3.2	1.0
14	0212	9.4	2.9	29	0216	8.0	2.4
Su	0935	-1.8	-0.5	M	0934	-0.5	-0.2
	1612	7.3	2.2		1611	6.8	2.1
	2129	2.9	0.9		2129	3.1	0.9
15	0307	9.0	2.7	30	0258	7.8	2.4
M	1025	-1.4	-0.4	Tu	1003	-0.3	-0.1
	1702	7.4	2.3		1643	6.9	2.1
	2228	2.7	0.8		2215	3.0	0.9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0340	7.4	2.3	16	0501	7.3	2.2
W	1035	0.1	0.0	Th	1126	0.0	0.0
	1715	7.1	2.2		1757	8.2	2.5
	2300	2.8	0.9				
2	0429	6.9	2.1	17	0019	1.2	0.4
Th	1109	0.5	0.2	F	0609	6.5	2.0
	1752	7.3	2.2		1211	0.9	0.3
	2352	2.5	0.8		1842	8.3	2.5
3	0525	6.4	2.0	18	0125	0.9	0.3
F	1147	1.0	0.3	Sa	0722	5.9	1.8
	1828	7.5	2.3		1301	1.7	0.5
					1929	8.3	2.5
4	0055	2.1	0.6	19	0233	0.5	0.2
Sa	0639	5.9	1.8	Su	0838	5.6	1.7
	1229	1.5	0.5		1355	2.4	0.7
	1907	7.8	2.4		2019	8.2	2.5
5	0200	1.5	0.5	20	0337	0.1	0.0
Su	0802	5.6	1.7	M	0949	5.7	1.7
	1321	2.1	0.6		1454	2.9	0.9
	1953	8.1	2.5		2107	8.1	2.5
6	0306	0.8	0.2	21	0435	-0.3	-0.1
M	0921	5.6	1.7	Tu	1055	5.9	1.8
	1421	2.6	0.8		1557	3.1	0.9
	2043	8.5	2.6		2157	8.1	2.5
7	0410	0.0	0.0	22	0529	-0.6	-0.2
Tu	1034	5.8	1.8	W	1148	6.2	1.9
	1526	3.0	0.9		1653	3.2	1.0
	2135	8.8	2.7		2244	8.1	2.5
8	0506	-0.8	-0.2	23	0612	-0.8	-0.2
W	1137	6.1	1.9	Th	1236	6.4	2.0
	1629	3.2	1.0		1744	3.1	0.9
	2228	9.1	2.8		2330	8.1	2.5
9	0602	-1.4	-0.4	24	0653	-0.9	-0.3
Th	1236	6.5	2.0	F	1317	6.6	2.0
	1731	3.2	1.0		1830	3.0	0.9
	2323	9.3	2.8				
10	0655	-1.9	-0.6	25	0012	8.1	2.5
F	1327	6.8	2.1	Sa	0730	-0.9	-0.3
	1831	3.0	0.9		1356	6.8	2.1
					1913	2.8	0.9
11	0018	9.5	2.9	26	0051	8.1	2.5
Sa	0745	-2.1	-0.6	Su	0805	-0.9	-0.3
	1416	7.1	2.2		1428	6.9	2.1
	1927	2.7	0.8		1953	2.7	0.8
12	0114	9.4	2.9	27	0129	8.0	2.4
Su	0833	-2.1	-0.6	M	0835	-0.7	-0.2
	1502	7.4	2.3		1500	7.0	2.1
	2023	2.4	0.7		2032	2.4	0.7
13	0210	9.2	2.8	28	0208	7.9	2.4
M	0919	-1.8	-0.5	Tu	0903	-0.6	-0.2
	1547	7.7	2.3		1529	7.1	2.2
	2119	2.0	0.6		2110	2.2	0.7
14	0305	8.8	2.7	29	0246	7.6	2.3
Tu	1001	-1.4	-0.4	W	0929	-0.3	-0.1
	1630	7.9	2.4		1554	7.3	2.2
	2215	1.7	0.5		2146	2.0	0.6
15	0401	8.1	2.5	30	0328	7.3	2.2
W	1044	-0.7	-0.2	Th	0954	0.1	0.0
	1712	8.1	2.5		1622	7.5	2.3
	2316	1.4	0.4		2228	1.7	0.5
				31	0414	6.7	2.0
				F	1026	0.6	0.2
					1651	7.7	2.3
					2313	1.4	0.4

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0507	6.2	1.9	16	0046	0.3	0.1
Sa	1058	1.2	0.4	Su	0658	5.6	1.7
	1726	7.9	2.4		1217	2.3	0.7
					1830	7.8	2.4
2	0009	1.1	0.3	17	0155	0.3	0.1
Su	0616	5.6	1.7	M	0817	5.3	1.6
	1140	1.8	0.5		1316	2.9	0.9
	1805	8.0	2.4		1927	7.5	2.3
3	0118	0.8	0.2	18	0304	0.2	0.1
M	0740	5.2	1.6	Tu	0933	5.5	1.7
	1233	2.5	0.8		1425	3.3	1.0
	1858	8.1	2.5		2027	7.3	2.2
4	0232	0.3	0.1	19	0409	0.0	0.0
Tu	0906	5.2	1.6	W	1035	5.8	1.8
	1341	3.0	0.9		1536	3.3	1.0
	2001	8.2	2.5		2130	7.3	2.2
5	0346	-0.3	-0.1	20	0503	-0.3	-0.1
W	1021	5.5	1.7	Th	1125	6.1	1.9
	1502	3.3	1.0		1637	3.1	0.9
	2107	8.4	2.6		2226	7.4	2.3
6	0451	-0.9	-0.3	21	0549	-0.5	-0.2
Th	1125	6.0	1.8	F	1210	6.4	2.0
	1617	3.2	1.0		1728	2.7	0.8
	2215	8.7	2.7		2315	7.6	2.3
7	0548	-1.4	-0.4	22	0626	-0.7	-0.2
F	1220	6.5	2.0	Sa	1245	6.7	2.0
	1724	2.8	0.9		1815	2.4	0.7
	2318	9.0	2.7				
8	0641	-1.8	-0.5	23	0000	7.8	2.4
Sa	1306	6.9	2.1	Su	0701	-0.7	-0.2
	1824	2.3	0.7		1319	6.9	2.1
					1855	2.0	0.6
9	0017	9.1	2.8	24	0042	7.8	2.4
Su	0726	-2.0	-0.6	M	0732	-0.7	-0.2
	1348	7.4	2.3		1349	7.1	2.2
	1920	1.7	0.5		1933	1.7	0.5
10	0112	9.1	2.8	25	0120	7.8	2.4
M	0810	-1.9	-0.6	Tu	0800	-0.5	-0.2
	1430	7.8	2.4		1417	7.3	2.2
	2013	1.2	0.4		2010	1.3	0.4
11	0204	8.9	2.7	26	0157	7.6	2.3
Tu	0851	-1.5	-0.5	W	0825	-0.2	-0.1
	1511	8.1	2.5		1439	7.6	2.3
	2106	0.7	0.2		2045	1.0	0.3
12	0258	8.4	2.6	27	0236	7.4	2.3
W	0930	-0.9	-0.3	Th	0853	0.1	0.0
	1547	8.3	2.5		1505	7.8	2.4
	2159	0.5	0.2		2122	0.7	0.2
13	0351	7.7	2.3	28	0316	7.0	2.1
Th	1008	-0.2	-0.1	F	0919	0.6	0.2
	1625	8.4	2.6		1530	8.0	2.4
	2251	0.3	0.1		2159	0.5	0.2
14	0447	6.9	2.1	29	0401	6.5	2.0
F	1046	0.6	0.2	Sa	0948	1.1	0.3
	1704	8.3	2.5		1556	8.1	2.5
	2347	0.3	0.1		2241	0.3	0.1
15	0550	6.1	1.9	30	0457	5.9	1.8
Sa	1128	1.5	0.5	Su	1023	1.7	0.5
	1745	8.1	2.5		1633	8.2	2.5
					2333	0.3	0.1
				31	0606	5.4	1.6
				M	1105	2.4	0.7
					1716	8.0	2.4

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0042	0.2	0.1	16	0225	0.5	0.2
Tu	0732	5.1	1.6	W	0904	5.6	1.7
	1205	3.0	0.9		1402	3.5	1.1
	1816	7.8	2.4		1948	6.6	2.0
2	0208	0.1	0.0	17	0333	0.4	0.1
W	0858	5.2	1.6	Th	1007	5.9	1.8
	1329	3.4	1.0		1515	3.3	1.0
	1935	7.7	2.3		2104	6.7	2.0
3	0328	-0.3	-0.1	18	0429	0.2	0.1
Th	1010	5.7	1.7	F	1053	6.3	1.9
	1502	3.3	1.0		1619	2.8	0.9
	2057	7.9	2.4		2205	7.0	2.1
4	0434	-0.8	-0.2	19	0511	0.0	0.0
F	1106	6.3	1.9	Sa	1131	6.7	2.0
	1618	2.8	0.9		1711	2.3	0.7
	2213	8.2	2.5		2259	7.3	2.2
5	0530	-1.2	-0.4	20	0548	-0.2	-0.1
Sa	1155	6.9	2.1	Su	1205	7.1	2.2
	1722	2.0	0.6		1754	1.7	0.5
	2316	8.5	2.6		2344	7.5	2.3
6	0619	-1.4	-0.4	21	0623	-0.1	0.0
Su	1236	7.4	2.3	M	1235	7.4	2.3
	1818	1.2	0.4		1833	1.2	0.4
7	0015	8.7	2.7	22	0026	7.6	2.3
M	0659	-1.4	-0.4	Tu	0652	0.0	0.0
	1315	7.9	2.4		1301	7.7	2.3
	1910	0.5	0.2		1912	0.7	0.2
8	0107	8.6	2.6	23	0105	7.6	2.3
Tu	0739	-1.1	-0.3	W	0721	0.3	0.1
	1351	8.3	2.5		1327	8.0	2.4
	1959	0.0	0.0		1947	0.3	0.1
9	0157	8.3	2.5	24	0146	7.4	2.3
W	0818	-0.6	-0.2	Th	0747	0.6	0.2
	1426	8.6	2.6		1350	8.2	2.5
	2045	-0.4	-0.1		2023	-0.1	0.0
10	0247	7.9	2.4	25	0227	7.2	2.2
Th	0853	0.0	0.0	F	0815	1.0	0.3
	1501	8.6	2.6		1415	8.4	2.6
	2133	-0.6	-0.2		2057	-0.4	-0.1
11	0338	7.3	2.2	26	0311	6.9	2.1
F	0929	0.8	0.2	Sa	0846	1.5	0.5
	1535	8.5	2.6		1441	8.6	2.6
	2219	-0.5	-0.2		2137	-0.5	-0.2
12	0430	6.6	2.0	27	0359	6.5	2.0
Sa	1007	1.5	0.5	Su	0918	2.0	0.6
	1607	8.2	2.5		1514	8.6	2.6
	2311	-0.2	-0.1		2219	-0.5	-0.2
13	0530	6.0	1.8	28	0454	6.0	1.8
Su	1049	2.3	0.7	M	0958	2.6	0.8
	1646	7.8	2.4		1556	8.4	2.6
					2316	-0.3	-0.1
14	0007	0.1	0.0	29	0604	5.6	1.7
M	0633	5.6	1.7	Tu	1049	3.1	0.9
	1138	2.9	0.9		1645	8.0	2.4
	1732	7.3	2.2				
15	0111	0.4	0.1	30	0027	0.0	0.0
Tu	0749	5.4	1.6	W	0728	5.5	1.7
	1244	3.4	1.0		1201	3.5	1.1
	1832	6.9	2.1		1755	7.6	2.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ASTORIA (Tongue Pt.), OREGON, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0149	0.1	0.0
Th	0845	5.8	1.8
	1339	3.5	1.1
	1929	7.3	2.2
2	0307	-0.1	0.0
F	0947	6.3	1.9
	1509	3.0	0.9
	2059	7.4	2.3
3	0410	-0.4	-0.1
Sa	1040	7.0	2.1
	1618	2.2	0.7
	2211	7.8	2.4
4	0501	-0.5	-0.2
Su	1122	7.7	2.3
	1717	1.2	0.4
	2314	8.0	2.4
5	0546	-0.5	-0.2
M	1200	8.3	2.5
	1810	0.3	0.1
6	0007	8.2	2.5
Tu	0627	-0.3	-0.1
	1236	8.7	2.7
	1858	-0.4	-0.1
7	0058	8.1	2.5
W	0704	0.2	0.1
	1310	9.0	2.7
	1941	-0.9	-0.3
8	0148	7.9	2.4
Th	0742	0.7	0.2
	1342	9.1	2.8
	2026	-1.1	-0.3
9	0237	7.5	2.3
F	0818	1.3	0.4
	1414	9.0	2.7
	2108	-1.1	-0.3
10	0327	7.1	2.2
Sa	0856	1.9	0.6
	1445	8.7	2.7
	2150	-0.8	-0.2
11	0416	6.7	2.0
Su	0935	2.5	0.8
	1517	8.3	2.5
	2236	-0.4	-0.1
12	0508	6.2	1.9
M	1017	3.1	0.9
	1554	7.8	2.4
	2326	0.1	0.0
13	0610	5.9	1.8
Tu	1107	3.5	1.1
	1639	7.2	2.2
14	0023	0.6	0.2
W	0719	5.8	1.8
	1213	3.8	1.2
	1740	6.7	2.0
15	0133	0.9	0.3
Th	0824	6.0	1.8
	1334	3.8	1.2
	1903	6.4	2.0
16	0240	0.9	0.3
F	0923	6.3	1.9
	1451	3.4	1.0
	2028	6.4	2.0
17	0336	0.9	0.3
Sa	1006	6.8	2.1
	1555	2.8	0.9
	2134	6.6	2.0
18	0422	0.8	0.2
Su	1042	7.2	2.2
	1644	2.0	0.6
	2233	6.9	2.1
19	0459	0.8	0.2
M	1117	7.7	2.3
	1727	1.3	0.4
	2322	7.2	2.2
20	0534	0.9	0.3
Tu	1144	8.1	2.5
	1808	0.6	0.2
21	0007	7.3	2.2
W	0606	1.1	0.3
	1211	8.5	2.6
	1846	0.0	0.0
22	0052	7.4	2.3
Th	0638	1.4	0.4
	1237	8.8	2.7
	1922	-0.5	-0.2
23	0136	7.3	2.2
F	0710	1.8	0.5
	1306	9.0	2.7
	2000	-0.9	-0.3
24	0221	7.2	2.2
Sa	0745	2.2	0.7
	1335	9.2	2.8
	2039	-1.1	-0.3
25	0309	7.0	2.1
Su	0820	2.6	0.8
	1410	9.2	2.8
	2121	-1.0	-0.3
26	0359	6.7	2.0
M	0901	3.0	0.9
	1449	9.0	2.7
	2209	-0.8	-0.2
27	0456	6.4	2.0
Tu	0951	3.4	1.0
	1537	8.7	2.7
	2308	-0.4	-0.1
28	0604	6.3	1.9
W	1054	3.7	1.1
	1635	8.1	2.5
29	0014	0.0	0.0
Th	0714	6.4	2.0
	1216	3.8	1.2
	1751	7.5	2.3
30	0128	0.2	0.1
F	0819	6.7	2.0
	1347	3.4	1.0
	1924	7.2	2.2
31	0235	0.4	0.1
Sa	0916	7.4	2.3
	1507	2.6	0.8
	2054	7.2	2.2

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0336	0.4	0.1
Su	1003	8.0	2.4
	1613	1.6	0.5
	2206	7.4	2.3
2	0425	0.6	0.2
M	1045	8.7	2.7
	1709	0.6	0.2
	2306	7.6	2.3
3	0511	0.8	0.2
Tu	1122	9.2	2.8
	1757	-0.3	-0.1
4	0002	7.7	2.3
W	0553	1.2	0.4
	1158	9.4	2.9
	1843	-0.9	-0.3
5	0052	7.7	2.3
Th	0632	1.7	0.5
	1231	9.5	2.9
	1925	-1.2	-0.4
6	0141	7.6	2.3
F	0711	2.2	0.7
	1304	9.4	2.9
	2007	-1.2	-0.4
7	0228	7.4	2.3
Sa	0750	2.6	0.8
	1336	9.2	2.8
	2046	-1.0	-0.3
8	0314	7.2	2.2
Su	0828	3.1	0.9
	1408	8.9	2.7
	2125	-0.7	-0.2
9	0359	7.0	2.1
M	0909	3.4	1.0
	1442	8.5	2.6
	2207	-0.3	-0.1
10	0449	6.7	2.0
Tu	0953	3.7	1.1
	1521	8.0	2.4
	2249	0.2	0.1
11	0541	6.5	2.0
W	1044	4.0	1.2
	1603	7.6	2.3
	2339	0.7	0.2
12	0634	6.5	2.0
Th	1145	4.1	1.2
	1701	7.0	2.1
13	0034	1.1	0.3
F	0733	6.6	2.0
	1259	3.9	1.2
	1817	6.6	2.0
14	0130	1.4	0.4
Sa	0825	6.9	2.1
	1410	3.5	1.1
	1941	6.4	2.0
15	0227	1.6	0.5
Su	0907	7.4	2.3
	1516	2.8	0.9
	2058	6.4	2.0
16	0317	1.7	0.5
M	0944	7.9	2.4
	1610	1.9	0.6
	2201	6.6	2.0
17	0359	1.9	0.6
Tu	1018	8.3	2.5
	1659	1.1	0.3
	2258	6.8	2.1
18	0442	2.1	0.6
W	1051	8.8	2.7
	1742	0.3	0.1
	2351	7.1	2.2
19	0520	2.4	0.7
Th	1122	9.2	2.8
	1821	-0.4	-0.1
20	0040	7.2	2.2
F	0559	2.7	0.8
	1155	9.5	2.9
	1903	-0.9	-0.3
21	0129	7.3	2.2
Sa	0641	3.0	0.9
	1231	9.7	3.0
	1945	-1.2	-0.4
22	0216	7.4	2.3
Su	0723	3.2	1.0
	1308	9.8	3.0
	2029	-1.3	-0.4
23	0306	7.3	2.2
M	0809	3.4	1.0
	1351	9.7	3.0
	2115	-1.2	-0.4
24	0355	7.2	2.2
Tu	0858	3.6	1.1
	1439	9.5	2.9
	2205	-0.9	-0.3
25	0451	7.2	2.2
W	0954	3.7	1.1
	1532	9.0	2.7
	2257	-0.5	-0.2
26	0549	7.2	2.2
Th	1102	3.7	1.1
	1637	8.3	2.5
	2357	0.0	0.0
27	0645	7.5	2.3
F	1219	3.5	1.1
	1753	7.6	2.3
28	0056	0.5	0.2
Sa	0741	7.9	2.4
	1339	2.9	0.9
	1919	7.1	2.2
29	0155	1.0	0.3
Su	0833	8.4	2.6
	1452	2.1	0.6
	2042	6.9	2.1
30	0251	1.5	0.5
M	0921	8.9	2.7
	1557	1.1	0.3
	2157	7.0	2.1

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0344	1.9	0.6
Tu	1004	9.3	2.8
	1653	0.3	0.1
	2259	7.1	2.2
2	0435	2.3	0.7
W	1045	9.6	2.9
	1742	-0.4	-0.1
	2356	7.3	2.2
3	0519	2.7	0.8
Th	1122	9.7	3.0
	1828	-0.9	-0.3
4	0047	7.4	2.3
F	0604	3.0	0.9
	1159	9.6	2.9
	1910	-1.0	-0.3
5	0134	7.5	2.3
Sa	0648	3.3	1.0
	1233	9.5	2.9
	1952	-1.0	-0.3
6	0221	7.5	2.3
Su	0730	3.5	1.1
	1309	9.2	2.8
	2030	-0.8	-0.2
7	0303	7.5	2.3
M	0812	3.7	1.1
	1343	9.0	2.7
	2106	-0.5	-0.2
8	0345	7.4	2.3
Tu	0853	3.9	1.2
	1420	8.7	2.7
	2145	-0.1	0.0
9	0424	7.3	2.2
W	0935	3.9	1.2
	1501	8.4	2.6
	2221	0.3	0.1
10	0505	7.2	2.2
Th	1020	4.0	1.2
	1543	8.0	2.4
	2257	0.7	0.2
11	0547	7.2	2.2
F	1115	3.9	1.2
	1635	7.4	2.3
	2336	1.1	0.3
12	0630	7.4	2.3
Sa	1215	3.7	1.1
	1734	6.9	2.1
13	0021	1.6	0.5
Su	0712	7.6	2.3
	1321	3.4	1.0
	1853	6.4	2.0
14	0107	2.0	0.6
M	0754	7.9	2.4
	1430	2.7	0.8
	2013	6.2	1.9
15	0158	2.5	0.8
Tu	0835	8.3	2.5
	1532	1.9	0.6
	2128	6.2	1.9
16	0253	2.9	0.9
W	0916	8.8	2.7
	1624	1.1	0.3
	2237	6.5	2.0
17	0344	3.2	1.0
Th	0957	9.2	2.8
	1713	0.2	0.1
	2335	6.8	2.1
18	0434	3.5	1.1
F	1036	9.5	2.9
	1759	-0.4	-0.1
19	0028	7.1	2.2
Sa	0527	3.7	1.1
	1120	9.8	3.0
	1849	-1.0	-0.3
20	0120	7.4	2.3
Su	0620	3.7	1.1
	1207	10.0	3.0
	1935	-1.3	-0.4
21	0209	7.6	2.3
M	0711	3.7	1.1
	1256	10.1	3.1
	2022	-1.4	-0.4
22	0258	7.7	2.3
Tu	0803	3.6	1.1
	1345	10.0	3.0
	2108	-1.3	-0.4
23	0343	7.9	2.4
W	0859	3.4	1.0
	1440	9.7	3.0
	2154	-1.0	-0.3
24	0431	8.0	2.4
Th	0956	3.2	1.0
	1536	9.2	2.8
	2240	-0.5	-0.2
25	0520	8.2	2.5
F	1059	3.0	0.9
	1638	8.4	2.6
	2328	0.2	0.1
26	0606	8.5	2.6
Sa	1205	2.7	0.8
	1748	7.6	2.3
27	0017	0.9	0.3
Su	0655	8.7	2.7
	1317	2.2	0.7
	1904	6.9	2.1
28	0109	1.7	0.5
M	0746	9.0	2.7
	1430	1.6	0.5
	2026	6.6	2.0
29	0205	2.4	0.7
Tu	0835	9.2	2.8
	1536	0.9	0.3
	2141	6.6	2.0
30	0303	3.0	0.9
W	0922	9.4	2.9
	1638	0.2	0.1
	2250	6.8	2.1
31	0402	3.4	1.0
Th	1008	9.4	2.9
	1730	-0.2	-0.1
	2349	7.0	2.1

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ABERDEEN, WASHINGTON, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0228	10.0	3.0	16	0236	9.3	2.8
Th	0803	4.1	1.2	F	0813	4.5	1.4
	1342	12.5	3.8		1341	10.9	3.3
	2045	-1.5	-0.5		2044	0.3	0.1
2	0317	10.2	3.1	17	0307	9.4	2.9
F	0855	3.9	1.2	Sa	0854	4.4	1.3
	1438	12.0	3.7		1416	10.7	3.3
	2131	-1.0	-0.3		2119	0.6	0.2
3	0405	10.4	3.2	18	0336	9.6	2.9
Sa	0946	3.7	1.1	Su	0934	4.2	1.3
	1531	11.3	3.4		1455	10.4	3.2
	2216	-0.2	-0.1		2154	1.1	0.3
4	0451	10.6	3.2	19	0405	9.9	3.0
Su	1040	3.5	1.1	M	1014	3.9	1.2
	1629	10.4	3.2		1534	9.9	3.0
	2259	0.7	0.2		2226	1.7	0.5
5	0533	10.7	3.3	20	0437	10.1	3.1
M	1135	3.4	1.0	Tu	1059	3.6	1.1
	1728	9.5	2.9		1622	9.4	2.9
	2347	1.7	0.5		2258	2.3	0.7
6	0619	10.8	3.3	21	0512	10.4	3.2
Tu	1234	3.2	1.0	W	1148	3.2	1.0
	1831	8.7	2.7		1720	8.8	2.7
					2330	3.1	0.9
7	0036	2.7	0.8	22	0554	10.7	3.3
W	0703	10.9	3.3	Th	1245	2.8	0.9
	1335	2.9	0.9		1830	8.2	2.5
	1940	8.2	2.5				
8	0126	3.6	1.1	23	0012	3.9	1.2
Th	0751	10.9	3.3	F	0645	10.9	3.3
	1435	2.5	0.8		1350	2.3	0.7
	2051	7.9	2.4		1947	7.8	2.4
9	0224	4.3	1.3	24	0114	4.6	1.4
F	0837	10.9	3.3	Sa	0741	11.1	3.4
	1535	2.1	0.6		1459	1.6	0.5
	2201	7.9	2.4		2104	7.8	2.4
10	0323	4.8	1.5	25	0240	5.2	1.6
Sa	0924	10.9	3.3	Su	0845	11.3	3.4
	1633	1.6	0.5		1605	0.8	0.2
	2305	8.1	2.5		2223	8.1	2.5
11	0418	5.0	1.5	26	0356	5.3	1.6
Su	1013	11.0	3.4	M	0948	11.6	3.5
	1721	1.1	0.3		1706	0.0	0.0
					2333	8.6	2.6
12	0002	8.4	2.6	27	0505	5.0	1.5
M	0514	5.0	1.5	Tu	1047	12.0	3.7
	1059	11.0	3.4		1801	-0.7	-0.2
	1808	0.7	0.2				
13	0050	8.7	2.7	28	0032	9.2	2.8
Tu	0603	4.9	1.5	W	0604	4.4	1.3
	1142	11.1	3.4		1147	12.2	3.7
	1850	0.4	0.1		1853	-1.2	-0.4
14	0129	8.9	2.7	29	0124	9.8	3.0
W	0648	4.8	1.5	Th	0700	3.8	1.2
	1224	11.1	3.4		1245	12.3	3.7
	1930	0.2	0.1		1939	-1.4	-0.4
15	0208	9.1	2.8	30	0209	10.3	3.1
Th	0733	4.6	1.4	F	0750	3.2	1.0
	1305	11.1	3.4		1337	12.1	3.7
	2008	0.2	0.1		2024	-1.1	-0.3
				31	0251	10.7	3.3
				Sa	0839	2.7	0.8
					1430	11.7	3.6
					2107	-0.6	-0.2

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0330	10.9	3.3	16	0257	10.1	3.1
Su	0929	2.4	0.7	M	0913	2.6	0.8
	1518	11.0	3.4		1446	10.1	3.1
	2149	0.2	0.1		2125	1.3	0.4
2	0408	11.1	3.4	17	0323	10.4	3.2
M	1017	2.2	0.7	Tu	0952	2.3	0.7
	1610	10.1	3.1		1527	9.6	2.9
	2229	1.1	0.3		2157	2.0	0.6
3	0445	11.0	3.4	18	0355	10.6	3.2
Tu	1106	2.2	0.7	W	1034	2.0	0.6
	1703	9.2	2.8		1613	9.1	2.8
	2311	2.2	0.7		2226	2.7	0.8
4	0525	10.9	3.3	19	0428	10.7	3.3
W	1157	2.2	0.7	Th	1119	1.7	0.5
	1759	8.4	2.6		1709	8.5	2.6
	2354	3.2	1.0		2257	3.4	1.0
5	0607	10.7	3.3	20	0507	10.7	3.3
Th	1251	2.3	0.7	F	1215	1.6	0.5
	1902	7.8	2.4		1813	7.8	2.4
					2336	4.2	1.3
6	0042	4.1	1.2	21	0600	10.7	3.3
F	0653	10.4	3.2	Sa	1321	1.5	0.5
	1350	2.3	0.7		1930	7.4	2.3
	2011	7.4	2.3				
7	0139	4.8	1.5	22	0045	4.9	1.5
Sa	0745	10.2	3.1	Su	0707	10.6	3.2
	1455	2.2	0.7		1433	1.2	0.4
	2127	7.4	2.3		2055	7.4	2.3
8	0245	5.2	1.6	23	0223	5.3	1.6
Su	0842	10.1	3.1	M	0821	10.6	3.2
	1557	1.9	0.6		1543	0.7	0.2
	2240	7.6	2.3		2212	7.8	2.4
9	0349	5.2	1.6	24	0346	5.0	1.5
M	0941	10.1	3.1	Tu	0933	10.8	3.3
	1654	1.5	0.5		1646	0.1	0.0
	2342	8.0	2.4		2321	8.5	2.6
10	0449	5.0	1.5	25	0454	4.4	1.3
Tu	1034	10.3	3.1	W	1042	11.1	3.4
	1743	1.0	0.3		1742	-0.5	-0.2
11	0025	8.4	2.6	26	0013	9.2	2.8
W	0542	4.6	1.4	Th	0553	3.5	1.1
	1126	10.5	3.2		1144	11.3	3.4
	1826	0.6	0.2		1832	-0.8	-0.2
12	0104	8.8	2.7	27	0058	9.9	3.0
Th	0630	4.2	1.3	F	0647	2.5	0.8
	1211	10.6	3.2		1238	11.4	3.5
	1907	0.3	0.1		1916	-0.8	-0.2
13	0135	9.2	2.8	28	0137	10.5	3.2
F	0713	3.8	1.2	Sa	0736	1.7	0.5
	1251	10.7	3.3		1329	11.2	3.4
	1944	0.3	0.1		1958	-0.5	-0.2
14	0203	9.5	2.9				
Sa	0756	3.4	1.0				
	1329	10.6	3.2				
	2019	0.4	0.1				
15	0229	9.8	3.0				
Su	0835	3.0	0.9				
	1407	10.4	3.2				
	2053	0.8	0.2				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0215	10.9	3.3	16	0145	10.1	3.1
Su	0821	1.2	0.4	M	0809	1.2	0.4
	1419	10.8	3.3		1355	9.8	3.0
	2038	0.1	0.0		2024	1.2	0.4
2	0249	11.1	3.4	17	0214	10.4	3.2
M	0905	0.8	0.2	Tu	0849	0.7	0.2
	1506	10.2	3.1		1436	9.5	2.9
	2118	0.8	0.2		2056	1.8	0.5
3	0322	11.1	3.4	18	0244	10.6	3.2
Tu	0949	0.8	0.2	W	0929	0.4	0.1
	1550	9.5	2.9		1521	9.1	2.8
	2157	1.7	0.5		2131	2.5	0.8
4	0356	10.9	3.3	19	0314	10.7	3.3
W	1033	0.9	0.3	Th	1012	0.3	0.1
	1637	8.8	2.7		1606	8.6	2.6
	2234	2.6	0.8		2203	3.2	1.0
5	0432	10.5	3.2	20	0350	10.7	3.3
Th	1119	1.2	0.4	F	1101	0.3	0.1
	1728	8.0	2.4		1703	8.0	2.4
	2315	3.5	1.1		2242	3.8	1.2
6	0512	10.1	3.1	21	0435	10.5	3.2
F	1210	1.6	0.5	Sa	1156	0.5	0.2
	1824	7.4	2.3		1810	7.5	2.3
					2334	4.4	1.3
7	0000	4.3	1.3	22	0536	10.1	3.1
Sa	0600	9.7	3.0	Su	1301	0.7	0.2
	1306	1.9	0.6		1927	7.3	2.2
	1930	7.1	2.2				
8	0100	4.9	1.5	23	0055	4.9	1.5
Su	0657	9.3	2.8	M	0652	9.7	3.0
	1410	2.1	0.6		1411	0.7	0.2
	2045	7.0	2.1		2047	7.4	2.3
9	0209	5.1	1.6	24	0220	4.8	1.5
M	0801	9.1	2.8	Tu	0812	9.6	2.9
	1516	2.0	0.6		1520	0.5	0.2
	2201	7.2	2.2		2159	8.0	2.4
10	0320	5.0	1.5	25	0338	4.2	1.3
Tu	0906	9.2	2.8	W	0927	9.7	3.0
	1617	1.6	0.5		1623	0.2	0.1
	2257	7.7	2.3		2255	8.8	2.7
11	0425	4.6	1.4	26	0444	3.2	1.0
W	1008	9.4	2.9	Th	1036	10.0	3.0
	1709	1.1	0.3		1718	-0.1	0.0
	2342	8.3	2.5		2342	9.5	2.9
12	0520	3.9	1.2	27	0542	2.1	0.6
Th	1100	9.6	2.9	F	1139	10.2	3.1
	1755	0.8	0.2		1805	-0.1	0.0
13	0018	8.8	2.7	28	0022	10.2	3.1
F	0606	3.2	1.0	Sa	0631	1.1	0.3
	1150	9.8	3.0		1232	10.2	3.1
	1835	0.6	0.2		1850	0.0	0.0
14	0050	9.3	2.8	29	0059	10.6	3.2
Sa	0651	2.4	0.7	Su	0717	0.3	0.1
	1235	10.0	3.0		1321	10.1	3.1
	1912	0.6	0.2		1929	0.4	0.1
15	0118	9.8	3.0	30	0133	10.9	3.3
Su	0731	1.8	0.5	M	0759	-0.2	-0.1
	1313	9.9	3.0		1407	9.8	3.0
	1949	0.8	0.2		2009	1.0	0.3
				31	0205	10.9	3.3
				Tu	0840	-0.4	-0.1
					1450	9.3	2.8
					2047	1.7	0.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ABERDEEN, WASHINGTON, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0236	10.7	3.3	16	0207	10.8	3.3
W	0920	-0.4	-0.1	Th	0910	-1.2	-0.4
	1531	8.8	2.7		1515	8.6	2.6
	2125	2.4	0.7		2110	3.0	0.9
2	0309	10.4	3.2	17	0244	10.7	3.3
Th	1002	-0.1	0.0	F	0955	-1.1	-0.3
	1613	8.2	2.5		1608	8.1	2.5
	2203	3.1	0.9		2151	3.5	1.1
3	0344	10.0	3.0	18	0329	10.4	3.2
F	1045	0.4	0.1	Sa	1045	-0.8	-0.2
	1659	7.7	2.3		1707	7.7	2.3
	2243	3.8	1.2		2242	4.0	1.2
4	0420	9.5	2.9	19	0419	10.0	3.0
Sa	1133	0.9	0.3	Su	1141	-0.4	-0.1
	1754	7.2	2.2		1813	7.5	2.3
	2328	4.3	1.3		2344	4.3	1.3
5	0506	9.0	2.7	20	0528	9.4	2.9
Su	1225	1.4	0.4	M	1245	0.0	0.0
	1857	6.9	2.1		1925	7.6	2.3
6	0028	4.7	1.4	21	0059	4.3	1.3
M	0608	8.6	2.6	Tu	0647	8.9	2.7
	1327	1.7	0.5		1348	0.3	0.1
	2006	6.9	2.1		2032	8.0	2.4
7	0139	4.8	1.5	22	0216	3.9	1.2
Tu	0719	8.3	2.5	W	0806	8.7	2.7
	1431	1.7	0.5		1452	0.5	0.2
	2109	7.2	2.2		2130	8.6	2.6
8	0250	4.5	1.4	23	0327	3.0	0.9
W	0830	8.3	2.5	Th	0922	8.7	2.7
	1531	1.6	0.5		1551	0.5	0.2
	2201	7.7	2.3		2219	9.3	2.8
9	0353	3.9	1.2	24	0431	1.9	0.6
Th	0936	8.4	2.6	F	1028	8.8	2.7
	1625	1.3	0.4		1647	0.6	0.2
	2243	8.3	2.5		2303	9.9	3.0
10	0449	3.0	0.9	25	0523	0.8	0.2
F	1033	8.7	2.7	Sa	1129	8.9	2.7
	1710	1.2	0.4		1733	0.8	0.2
	2321	9.0	2.7		2342	10.4	3.2
11	0539	2.0	0.6	26	0612	-0.2	-0.1
Sa	1124	8.9	2.7	Su	1222	9.0	2.7
	1756	1.1	0.3		1816	1.1	0.3
	2356	9.5	2.9				
12	0623	1.0	0.3	27	0019	10.6	3.2
Su	1213	9.1	2.8	M	0655	-0.8	-0.2
	1835	1.3	0.4		1310	8.9	2.7
					1901	1.5	0.5
13	0029	10.0	3.0	2	0051	10.7	3.3
M	0704	0.2	0.1		0737	-1.1	-0.3
	1257	9.2	2.8		1353	8.7	2.7
	1915	1.6	0.5		1939	2.0	0.6
14	0101	10.4	3.2	29	0125	10.6	3.2
Tu	0747	-0.5	-0.2	W	0815	-1.2	-0.4
	1343	9.1	2.8		1434	8.5	2.6
	1953	2.0	0.6		2020	2.5	0.8
15	0133	10.6	3.2	30	0157	10.3	3.1
W	0829	-1.0	-0.3	Th	0856	-1.0	-0.3
	1428	8.9	2.7		1515	8.1	2.5
	2031	2.5	0.8		2057	3.0	0.9

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0231	10.0	3.0	16	0228	10.7	3.3
F	0936	-0.7	-0.2	Sa	0942	-2.0	-0.6
	1557	7.7	2.3		1607	8.0	2.4
	2138	3.5	1.1		2146	3.6	1.1
2	0303	9.6	2.9	17	0318	10.2	3.1
Sa	1018	-0.2	-0.1	Su	1032	-1.6	-0.5
	1640	7.4	2.3		1709	7.9	2.4
	2219	3.9	1.2		2242	3.7	1.1
3	0341	9.1	2.8	18	0418	9.6	2.9
Su	1101	0.3	0.1	M	1127	-1.1	-0.3
	1729	7.2	2.2		1808	8.0	2.4
	2305	4.2	1.3		2344	3.7	1.1
4	0427	8.7	2.7	19	0526	8.9	2.7
M	1151	0.7	0.2	Tu	1223	-0.5	-0.2
	1825	7.1	2.2		1907	8.3	2.5
5	0002	4.4	1.3	20	0052	3.4	1.0
Tu	0526	8.2	2.5	W	0642	8.3	2.5
	1243	1.1	0.3		1321	0.1	0.0
	1923	7.2	2.2		2003	8.7	2.7
6	0108	4.3	1.3	21	0203	2.8	0.9
W	0635	7.8	2.4	Th	0756	8.0	2.4
	1340	1.4	0.4		1420	0.7	0.2
	2013	7.6	2.3		2053	9.3	2.8
7	0215	3.9	1.2	22	0309	1.9	0.6
Th	0748	7.6	2.3	F	0909	7.8	2.4
	1439	1.6	0.5		1515	1.1	0.3
	2102	8.1	2.5		2139	9.8	3.0
8	0317	3.1	0.9	23	0409	0.9	0.3
F	0856	7.6	2.3	Sa	1015	7.8	2.4
	1533	1.7	0.5		1609	1.6	0.5
	2146	8.7	2.7		2221	10.1	3.1
9	0415	2.1	0.6	24	0502	0.0	0.0
Sa	0959	7.8	2.4	Su	1118	7.9	2.4
	1625	1.8	0.5		1700	1.9	0.6
	2225	9.3	2.8		2302	10.4	3.2
10	0505	1.0	0.3	25	0550	-0.7	-0.2
Su	1056	8.0	2.4	M	1209	7.9	2.4
	1713	1.9	0.6		1745	2.2	0.7
	2303	9.9	3.0		2340	10.4	3.2
11	0553	-0.1	0.0	26	0633	-1.2	-0.4
M	1150	8.2	2.5	Tu	1258	8.0	2.4
	1759	2.2	0.7		1831	2.6	0.8
	2342	10.3	3.1				
12	0638	-1.0	-0.3	27	0017	10.4	3.2
Tu	1241	8.4	2.6	W	0714	-1.4	-0.4
	1841	2.5	0.8		1344	7.9	2.4
					1913	2.9	0.9
13	0019	10.7	3.3	28	0052	10.2	3.1
W	0723	-1.7	-0.5	Th	0755	-1.4	-0.4
	1332	8.4	2.6		1426	7.8	2.4
	1926	2.8	0.9		1955	3.2	1.0
14	0101	10.9	3.3	29	0126	9.9	3.0
Th	0807	-2.1	-0.6	F	0835	-1.2	-0.4
	1422	8.4	2.6		1504	7.7	2.3
	2009	3.1	0.9		2037	3.4	1.0
15	0140	10.9	3.3	30	0202	9.6	2.9
F	0855	-2.2	-0.7	Sa	0913	-1.0	-0.3
	1514	8.2	2.5		1542	7.5	2.3
	2056	3.3	1.0		2116	3.7	1.1
				31	0237	9.3	2.8
				Su	0954	-0.6	-0.2
					1622	7.4	2.3
					2158	3.9	1.2

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0313	8.9	2.7	16	0415	9.4	2.9
M	1036	-0.2	-0.1	Tu	1106	-1.3	-0.4
	1707	7.4	2.3		1744	8.8	2.7
	2245	4.0	1.2		2332	2.7	0.8
2	0358	8.5	2.6	17	0520	8.7	2.7
Tu	1115	0.2	0.1	W	1156	-0.5	-0.2
	1749	7.5	2.3		1834	9.1	2.8
	2337	3.9	1.2				
3	0453	8.0	2.4	18	0035	2.3	0.7
W	1202	0.7	0.2	Th	0628	7.9	2.4
	1834	7.8	2.4		1249	0.4	0.1
					1923	9.4	2.9
4	0036	3.7	1.1	19	0139	1.8	0.5
Th	0557	7.5	2.3	F	0739	7.4	2.3
	1249	1.2	0.4		1342	1.2	0.4
	1920	8.2	2.5		2010	9.7	3.0
5	0136	3.1	0.9	20	0245	1.1	0.3
F	0708	7.2	2.2	Sa	0848	7.1	2.2
	1340	1.7	0.5		1436	1.9	0.6
	2005	8.6	2.6		2056	9.9	3.0
6	0238	2.3	0.7	21	0344	0.4	0.1
Sa	0817	7.0	2.1	Su	0958	7.0	2.1
	1436	2.1	0.6		1532	2.5	0.8
	2047	9.1	2.8		2140	10.0	3.0
7	0337	1.3	0.4	22	0438	-0.2	-0.1
Su	0924	7.1	2.2	M	1102	7.1	2.2
	1532	2.5	0.8		1625	2.9	0.9
	2133	9.7	3.0		2224	10.1	3.1
8	0433	0.3	0.1	23	0525	-0.7	-0.2
M	1028	7.3	2.2	Tu	1157	7.2	2.2
	1627	2.8	0.9		1716	3.1	0.9
	2217	10.2	3.1		2306	10.0	3.0
9	0523	-0.8	-0.2	24	0611	-1.1	-0.3
Tu	1129	7.5	2.3	W	1249	7.4	2.3
	1720	3.0	0.9		1806	3.2	1.0
	2302	10.6	3.2		2348	10.0	3.0
10	0614	-1.7	-0.5	25	0653	-1.3	-0.4
W	1225	7.8	2.4	Th	1335	7.5	2.3
	1812	3.2	1.0		1851	3.3	1.0
	2348	10.9	3.3				
11	0702	-2.3	-0.7	26	0027	9.8	3.0
Th	1321	8.0	2.4	F	0734	-1.3	-0.4
	1902	3.2	1.0		1414	7.6	2.3
					1936	3.4	1.0
12	0036	11.0	3.4	27	0104	9.7	3.0
F	0751	-2.7	-0.8	Sa	0815	-1.2	-0.4
	1417	8.1	2.5		1452	7.6	2.3
	1953	3.2	1.0		2018	3.4	1.0
13	0125	11.0	3.4	28	0143	9.5	2.9
Sa	0839	-2.8	-0.9	Su	0854	-1.1	-0.3
	1509	8.2	2.5		1524	7.6	2.3
	2043	3.2	1.0		2059	3.5	1.1
14	0217	10.7	3.3	29	0219	9.2	2.8
Su	0928	-2.5	-0.8	M	0931	-0.8	-0.2
	1603	8.4	2.6		1559	7.7	2.3
	2136	3.1	0.9		2141	3.5	1.1
15	0313	10.2	3.1	30	0257	8.9	2.7
M	1016	-2.0	-0.6	Tu	1007	-0.4	-0.1
	1653	8.6	2.6		1631	7.9	2.4
	2235	2.9	0.9		2224	3.3	1.0

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ABERDEEN, WASHINGTON, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0339	8.5	2.6	16	0506	8.5	2.6
W	1045	0.1	0.0	Th	1125	0.0	0.0
	1707	8.1	2.5		1752	9.7	3.0
	2309	3.1	0.9				
2	0424	8.0	2.4	17	0008	1.3	0.4
Th	1121	0.6	0.2	F	0609	7.6	2.3
	1744	8.4	2.6		1213	1.0	0.3
					1837	9.7	3.0
3	0001	2.8	0.9	18	0107	1.1	0.3
F	0523	7.5	2.3	Sa	0715	7.0	2.1
	1159	1.3	0.4		1302	2.0	0.6
	1823	8.7	2.7		1923	9.7	3.0
4	0057	2.3	0.7	19	0209	0.8	0.2
Sa	0629	7.0	2.1	Su	0823	6.6	2.0
	1241	2.0	0.6		1357	2.8	0.9
	1908	9.1	2.8		2011	9.6	2.9
5	0159	1.6	0.5	20	0310	0.5	0.2
Su	0740	6.7	2.0	M	0934	6.5	2.0
	1331	2.6	0.8		1456	3.3	1.0
	1955	9.5	2.9		2103	9.6	2.9
6	0258	0.8	0.2	21	0407	0.1	0.0
M	0851	6.6	2.0	Tu	1042	6.7	2.0
	1439	3.2	1.0		1556	3.6	1.1
	2045	9.8	3.0		2153	9.5	2.9
7	0400	-0.1	0.0	22	0500	-0.3	-0.1
Tu	1001	6.8	2.1	W	1145	6.9	2.1
	1546	3.6	1.1		1652	3.6	1.1
	2138	10.2	3.1		2239	9.6	2.9
8	0457	-1.0	-0.3	23	0550	-0.6	-0.2
W	1110	7.1	2.2	Th	1237	7.2	2.2
	1652	3.6	1.1		1745	3.5	1.1
	2233	10.6	3.2		2328	9.6	2.9
9	0551	-1.8	-0.5	24	0633	-0.9	-0.3
Th	1214	7.5	2.3	F	1319	7.5	2.3
	1750	3.5	1.1		1832	3.3	1.0
	2329	10.9	3.3				
10	0644	-2.4	-0.7	25	0011	9.6	2.9
F	1311	7.9	2.4	Sa	0714	-1.0	-0.3
	1846	3.2	1.0		1351	7.7	2.3
					1917	3.1	0.9
11	0024	11.0	3.4	26	0052	9.6	2.9
Sa	0735	-2.8	-0.9	Su	0752	-1.1	-0.3
	1402	8.3	2.5		1423	7.9	2.4
	1940	2.8	0.9		1959	3.0	0.9
12	0119	11.0	3.4	27	0131	9.4	2.9
Su	0822	-2.8	-0.9	M	0830	-0.9	-0.3
	1453	8.7	2.7		1452	8.1	2.5
	2032	2.4	0.7		2040	2.8	0.9
13	0212	10.7	3.3	28	0206	9.2	2.8
M	0908	-2.5	-0.8	Tu	0906	-0.6	-0.2
	1539	9.0	2.7		1522	8.3	2.5
	2124	2.1	0.6		2119	2.6	0.8
14	0307	10.1	3.1	29	0245	8.9	2.7
Tu	0954	-1.9	-0.6	W	0938	-0.2	-0.1
	1624	9.3	2.8		1549	8.5	2.6
	2218	1.8	0.5		2200	2.4	0.7
15	0406	9.3	2.8	30	0324	8.5	2.6
W	1039	-1.0	-0.3	Th	1011	0.4	0.1
	1707	9.5	2.9		1619	8.8	2.7
	2312	1.5	0.5		2240	2.1	0.6
				31	0406	8.0	2.4
				F	1041	1.1	0.3
					1651	9.0	2.7
					2325	1.8	0.5

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0459	7.5	2.3	16	0030	0.7	0.2
Sa	1111	1.8	0.5	Su	0646	6.9	2.1
	1728	9.2	2.8		1223	2.8	0.9
					1833	9.4	2.9
2	0020	1.4	0.4	17	0129	0.9	0.3
Su	0602	6.9	2.1	M	0756	6.5	2.0
	1142	2.5	0.8		1321	3.6	1.1
	1813	9.4	2.9		1929	9.1	2.8
3	0120	1.1	0.3	18	0231	0.9	0.3
M	0713	6.5	2.0	Tu	0911	6.4	2.0
	1229	3.2	1.0		1424	4.0	1.2
	1907	9.6	2.9		2026	9.0	2.7
4	0225	0.6	0.2	19	0335	0.7	0.2
Tu	0830	6.4	2.0	W	1021	6.6	2.0
	1353	3.8	1.2		1530	4.0	1.2
	2009	9.8	3.0		2125	9.0	2.7
5	0332	-0.1	0.0	20	0431	0.4	0.1
W	0947	6.6	2.0	Th	1120	7.0	2.1
	1519	4.1	1.2		1631	3.8	1.2
	2114	10.0	3.0		2220	9.1	2.8
6	0436	-0.8	-0.2	21	0525	0.0	0.0
Th	1055	7.0	2.1	F	1208	7.4	2.3
	1633	3.9	1.2		1724	3.4	1.0
	2217	10.4	3.2		2310	9.3	2.8
7	0534	-1.6	-0.5	22	0607	-0.3	-0.1
F	1158	7.6	2.3	Sa	1244	7.8	2.4
	1735	3.3	1.0		1812	3.0	0.9
	2319	10.7	3.3		2355	9.4	2.9
8	0626	-2.1	-0.6	23	0648	-0.5	-0.2
Sa	1254	8.3	2.5	Su	1315	8.2	2.5
	1832	2.6	0.8		1856	2.5	0.8
9	0016	10.9	3.3	24	0037	9.5	2.9
Su	0715	-2.4	-0.7	M	0727	-0.6	-0.2
	1339	8.9	2.7		1344	8.5	2.6
	1926	1.9	0.6		1939	2.1	0.6
10	0111	10.8	3.3	25	0115	9.4	2.9
M	0800	-2.3	-0.7	Tu	0801	-0.4	-0.1
	1421	9.4	2.9		1409	8.8	2.7
	2015	1.3	0.4		2018	1.7	0.5
11	0206	10.5	3.2	26	0154	9.2	2.8
Tu	0844	-1.8	-0.5	W	0833	0.0	0.0
	1502	9.8	3.0		1436	9.1	2.8
	2105	0.8	0.2		2057	1.4	0.4
12	0259	9.9	3.0	27	0231	8.9	2.7
W	0925	-1.1	-0.3	Th	0907	0.6	0.2
	1542	10.0	3.0		1502	9.3	2.8
	2154	0.5	0.2		2134	1.2	0.4
13	0351	9.1	2.8	28	0310	8.5	2.6
Th	1008	-0.1	0.0	F	0937	1.2	0.4
	1622	10.1	3.1		1531	9.5	2.9
	2243	0.4	0.1		2214	0.9	0.3
14	0447	8.3	2.5	29	0351	8.1	2.5
F	1050	0.9	0.3	Sa	1006	1.9	0.6
	1701	9.9	3.0		1600	9.6	2.9
	2335	0.5	0.2		2256	0.8	0.2
15	0543	7.5	2.3	30	0440	7.5	2.3
Sa	1134	1.9	0.6	Su	1032	2.6	0.8
	1746	9.7	3.0		1636	9.7	3.0
					2348	0.7	0.2
				31	0544	7.0	2.1
				M	1104	3.3	1.0
					1725	9.6	2.9

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0047	0.7	0.2	16	0150	1.3	0.4
Tu	0657	6.6	2.0	W	0836	6.6	2.0
	1158	4.0	1.2		1353	4.5	1.4
	1829	9.5	2.9		1948	8.5	2.6
2	0157	0.5	0.2	17	0256	1.3	0.4
W	0817	6.5	2.0	Th	0945	6.9	2.1
	1341	4.4	1.3		1504	4.4	1.3
	1945	9.5	2.9		2053	8.5	2.6
3	0309	0.1	0.0	18	0356	1.1	0.3
Th	0935	6.9	2.1	F	1041	7.4	2.3
	1511	4.3	1.3		1607	3.9	1.2
	2059	9.7	3.0		2155	8.7	2.7
4	0415	-0.4	-0.1	19	0449	0.7	0.2
F	1044	7.5	2.3	Sa	1123	8.0	2.4
	1623	3.7	1.1		1700	3.2	1.0
	2209	10.0	3.0		2247	9.0	2.7
5	0511	-1.0	-0.3	20	0534	0.5	0.2
Sa	1139	8.3	2.5	Su	1156	8.5	2.6
	1724	2.7	0.8		1749	2.5	0.8
	2314	10.4	3.2		2336	9.2	2.8
6	0604	-1.3	-0.4	21	0615	0.3	0.1
Su	1224	9.1	2.8	M	1228	9.0	2.7
	1819	1.7	0.5		1832	1.8	0.5
7	0011	10.6	3.2	22	0019	9.4	2.9
M	0650	-1.4	-0.4	Tu	0651	0.4	0.1
	1307	9.8	3.0		1255	9.4	2.9
	1909	0.8	0.2		1914	1.2	0.4
8	0105	10.5	3.2	23	0059	9.3	2.8
Tu	0734	-1.1	-0.3	W	0729	0.7	0.2
	1344	10.3	3.1		1323	9.7	3.0
	1958	0.1	0.0		1953	0.7	0.2
9	0155	10.2	3.1	24	0139	9.2	2.8
W	0816	-0.6	-0.2	Th	0802	1.2	0.4
	1421	10.6	3.2		1350	10.0	3.0
	2043	-0.3	-0.1		2031	0.3	0.1
10	0246	9.7	3.0	25	0218	9.0	2.7
Th	0855	0.2	0.1	F	0836	1.8	0.5
	1458	10.6	3.2		1417	10.2	3.1
	2129	-0.4	-0.1		2107	0.1	0.0
11	0334	9.0	2.7	26	0257	8.6	2.6
F	0937	1.1	0.3	Sa	0907	2.4	0.7
	1533	10.4	3.2		1447	10.2	3.1
	2214	-0.2	-0.1		2149	0.0	0.0
12	0422	8.3	2.5	27	0343	8.2	2.5
Sa	1016	2.1	0.6	Su	0940	3.1	0.9
	1611	10.1	3.1		1519	10.2	3.1
	2300	0.1	0.0		2234	0.1	0.0
13	0515	7.6	2.3	28	0435	7.7	2.3
Su	1059	2.9	0.9	M	1012	3.7	1.1
	1655	9.6	2.9		1558	10.1	3.1
	2352	0.6	0.2		2325	0.3	0.1
14	0618	7.0	2.1	29	0538	7.3	2.2
M	1150	3.7	1.1	Tu	1057	4.3	1.3
	1741	9.1	2.8		1653	9.7	3.0
15	0047	1.1	0.3	30	0029	0.5	0.2
Tu	0722	6.7	2.0	W	0653	7.0	2.1
	1246	4.3	1.3		1218	4.7	1.4
	1841	8.7	2.7		1812	9.4	2.9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ABERDEEN, WASHINGTON, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0137	0.6	0.2	16	0211	1.9	0.6
Th	0810	7.2	2.2	F	0855	7.6	2.3
	1345	4.7	1.4		1433	4.6	1.4
	1935	9.2	2.8		2017	8.3	2.5
2	0245	0.5	0.2	17	0311	1.8	0.5
F	0923	7.8	2.4	Sa	0948	8.2	2.5
	1506	4.2	1.3		1536	3.9	1.2
	2054	9.3	2.8		2123	8.5	2.6
3	0351	0.2	0.1	18	0404	1.7	0.5
Sa	1020	8.6	2.6	Su	1027	8.8	2.7
	1613	3.1	0.9		1633	3.1	0.9
	2204	9.6	2.9		2218	8.7	2.7
4	0446	0.0	0.0	19	0451	1.6	0.5
Su	1107	9.4	2.9	M	1102	9.4	2.9
	1713	2.0	0.6		1721	2.1	0.6
	2309	9.9	3.0		2310	9.0	2.7
5	0537	0.0	0.0	20	0536	1.7	0.5
M	1149	10.2	3.1	Tu	1137	9.9	3.0
	1805	0.8	0.2		1806	1.2	0.4
					2357	9.2	2.8
6	0004	10.1	3.1	21	0615	1.8	0.5
Tu	0623	0.1	0.0	W	1208	10.4	3.2
	1228	10.8	3.3		1847	0.5	0.2
	1852	-0.1	0.0				
7	0057	10.1	3.1	22	0042	9.3	2.8
W	0705	0.5	0.2	Th	0653	2.2	0.7
	1305	11.1	3.4		1238	10.7	3.3
	1936	-0.7	-0.2		1926	-0.1	0.0
8	0145	9.8	3.0	23	0123	9.2	2.8
Th	0745	1.1	0.3	F	0732	2.6	0.8
	1341	11.2	3.4		1310	11.0	3.4
	2020	-0.9	-0.3		2006	-0.5	-0.2
9	0230	9.4	2.9	24	0207	9.1	2.8
F	0826	1.8	0.5	Sa	0809	3.1	0.9
	1415	11.1	3.4		1342	11.1	3.4
	2103	-0.8	-0.2		2048	-0.7	-0.2
10	0315	8.9	2.7	25	0252	8.8	2.7
Sa	0906	2.5	0.8	Su	0846	3.7	1.1
	1448	10.7	3.3		1416	11.0	3.4
	2145	-0.5	-0.2		2130	-0.6	-0.2
11	0403	8.4	2.6	26	0339	8.5	2.6
Su	0947	3.3	1.0	M	0925	4.1	1.2
	1525	10.2	3.1		1454	10.9	3.3
	2230	0.1	0.0		2219	-0.4	-0.1
12	0453	7.8	2.4	27	0435	8.2	2.5
M	1030	3.9	1.2	Tu	1011	4.6	1.4
	1607	9.7	3.0		1542	10.5	3.2
	2315	0.7	0.2		2311	0.0	0.0
13	0549	7.4	2.3	28	0540	8.0	2.4
Tu	1118	4.5	1.4	W	1111	4.9	1.5
	1653	9.1	2.8		1647	9.9	3.0
14	0010	1.3	0.4	29	0010	0.5	0.2
W	0650	7.2	2.2	Th	0649	8.0	2.4
	1215	4.9	1.5		1225	5.0	1.5
	1752	8.6	2.6		1807	9.4	2.9
15	0107	1.7	0.5	30	0113	0.8	0.2
Th	0757	7.3	2.2	F	0757	8.4	2.6
	1324	4.9	1.5		1342	4.6	1.4
	1904	8.3	2.5		1929	9.1	2.8
				31	0219	1.1	0.3
				Sa	0857	9.1	2.8
					1456	3.7	1.1
					2047	9.1	2.8

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0320	1.2	0.4	16	0309	2.8	0.9
Su	0946	9.9	3.0	M	0927	9.7	3.0
	1602	2.6	0.8		1558	3.0	0.9
	2158	9.2	2.8		2143	8.4	2.6
2	0413	1.4	0.4	17	0401	2.9	0.9
M	1033	10.6	3.2	Tu	1007	10.2	3.1
	1657	1.3	0.4		1647	2.0	0.6
	2300	9.4	2.9		2241	8.6	2.6
3	0506	1.6	0.5	18	0451	3.2	1.0
Tu	1113	11.2	3.4	W	1044	10.8	3.3
	1748	0.3	0.1		1734	1.0	0.3
	2358	9.6	2.9		2335	8.9	2.7
4	0551	1.9	0.6	19	0537	3.4	1.0
W	1151	11.6	3.5	Th	1122	11.2	3.4
	1834	-0.5	-0.2		1819	0.1	0.0
5	0048	9.6	2.9	20	0022	9.1	2.8
Th	0637	2.3	0.7	F	0621	3.7	1.1
	1227	11.7	3.6		1158	11.6	3.5
	1917	-0.9	-0.3		1903	-0.5	-0.2
6	0136	9.5	2.9	21	0112	9.2	2.8
F	0719	2.8	0.9	Sa	0704	4.0	1.2
	1305	11.6	3.5		1236	11.8	3.6
	1959	-0.9	-0.3		1947	-0.9	-0.3
7	0219	9.3	2.8	22	0158	9.2	2.8
Sa	0801	3.3	1.0	Su	0746	4.2	1.3
	1340	11.3	3.4		1316	11.9	3.6
	2038	-0.7	-0.2		2031	-1.1	-0.3
8	0302	9.0	2.7	23	0248	9.1	2.8
Su	0841	3.8	1.2	M	0831	4.5	1.4
	1414	11.0	3.4		1359	11.7	3.6
	2120	-0.3	-0.1		2117	-1.0	-0.3
9	0345	8.6	2.6	24	0340	9.0	2.7
M	0921	4.3	1.3	Tu	0919	4.7	1.4
	1450	10.5	3.2		1445	11.4	3.5
	2201	0.2	0.1		2206	-0.6	-0.2
10	0430	8.3	2.5	25	0436	9.0	2.7
Tu	1005	4.7	1.4	W	1011	4.8	1.5
	1528	10.0	3.0		1541	10.9	3.3
	2245	0.8	0.2		2256	-0.1	0.0
11	0520	8.1	2.5	26	0533	9.1	2.8
W	1052	5.0	1.5	Th	1112	4.8	1.5
	1614	9.5	2.9		1646	10.2	3.1
	2333	1.4	0.4		2349	0.5	0.2
12	0612	8.0	2.4	27	0630	9.4	2.9
Th	1148	5.2	1.6	F	1218	4.6	1.4
	1709	8.9	2.7		1802	9.5	2.9
13	0026	1.9	0.6	28	0046	1.2	0.4
F	0707	8.2	2.5	Sa	0726	9.8	3.0
	1251	5.1	1.6		1328	4.0	1.2
	1820	8.5	2.6		1921	9.0	2.7
14	0119	2.2	0.7	29	0145	1.8	0.5
Sa	0800	8.6	2.6	Su	0818	10.4	3.2
	1358	4.7	1.4		1437	3.1	0.9
	1931	8.3	2.5		2037	8.8	2.7
15	0217	2.5	0.8	30	0242	2.4	0.7
Su	0845	9.1	2.8	M	0908	10.9	3.3
	1501	4.0	1.2		1542	2.1	0.6
	2040	8.2	2.5		2148	8.8	2.7

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0339	2.9	0.9	16	0309	4.1	1.2
Tu	0953	11.4	3.5	W	0909	10.8	3.3
	1638	1.1	0.3		1613	1.9	0.6
	2252	8.9	2.7		2208	8.3	2.5
2	0433	3.2	1.0	17	0404	4.5	1.4
W	1038	11.7	3.6	Th	0956	11.2	3.4
	1727	0.3	0.1		1705	1.0	0.3
	2350	9.1	2.8		2308	8.6	2.6
3	0522	3.6	1.1	18	0500	4.7	1.4
Th	1117	11.9	3.6	F	1041	11.6	3.5
	1813	-0.2	-0.1		1754	0.1	0.0
4	0041	9.2	2.8	19	0006	8.9	2.7
F	0611	3.8	1.2	Sa	0550	4.8	1.5
	1158	11.8	3.6		1127	12.0	3.7
	1857	-0.5	-0.2		1843	-0.6	-0.2
5	0131	9.3	2.8	20	0101	9.2	2.8
Sa	0656	4.1	1.2	Su	0641	4.7	1.4
	1235	11.7	3.6		1214	12.3	3.7
	1939	-0.5	-0.2		1929	-1.1	-0.3
6	0213	9.2	2.8	21	0154	9.4	2.9
Su	0738	4.3	1.3	M	0730	4.7	1.4
	1313	11.4	3.5		1301	12.3	3.7
	2019	-0.3	-0.1		2016	-1.3	-0.4
7	0251	9.1	2.8	22	0243	9.6	2.9
M	0820	4.6	1.4	Tu	0819	4.5	1.4
	1349	11.1	3.4		1351	12.2	3.7
	2059	0.0	0.0		2102	-1.2	-0.4
8	0330	9.0	2.7	23	0331	9.8	3.0
Tu	0903	4.8	1.5	W	0910	4.4	1.3
	1427	10.8	3.3		1443	11.8	3.6
	2137	0.4	0.1		2150	-0.8	-0.2
9	0411	8.9	2.7	24	0420	10.0	3.0
W	0945	5.0	1.5	Th	1005	4.2	1.3
	1504	10.4	3.2		1542	11.1	3.4
	2219	0.9	0.3		2236	-0.1	0.0
10	0450	8.9	2.7	25	0509	10.3	3.1
Th	1030	5.1	1.6	F	1101	3.9	1.2
	1545	9.9	3.0		1644	10.3	3.1
	2259	1.4	0.4		2325	0.7	0.2
11	0533	9.0	2.7	26	0557	10.5	3.2
F	1120	5.1	1.6	Sa	1200	3.6	1.1
	1634	9.3	2.8		1751	9.5	2.9
	2341	1.9	0.6				
12	0615	9.2	2.8	27	0015	1.7	0.5
Sa	1217	4.9	1.5	Su	0647	10.8	3.3
	1736	8.8	2.7		1306	3.1	0.9
					1903	8.8	2.7
13	0027	2.5	0.8	28	0108	2.6	0.8
Su	0657	9.5	2.9	M	0735	11.1	3.4
	1315	4.5	1.4		1411	2.6	0.8
	1845	8.3	2.5		2017	8.4	2.6
14	0116	3.1	0.9	29	0204	3.5	1.1
M	0742	9.9	3.0	Tu	0825	11.3	3.4
	1417	3.8	1.2		1514	1.9	0.6
	1955	8.1	2.5		2132	8.3	2.5
15	0209	3.7	1.1	30	0305	4.1	1.2
Tu	0827	10.3	3.1	W	0915	11.5	3.5
	1517	2.9	0.9		1613	1.3	0.4
	2103	8.1	2.5		2241	8.4	2.6
				31	0401	4.5	1.4
				Th	1004	11.5	3.5
					1708	0.7	0.2
					2345	8.6	2.6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0629	10.2	3.1	16	0634	9.2	2.8
Th	1053	7.8	2.4	F	1142	6.9	2.1
	1521	9.0	2.7		1526	7.5	2.3
	2255	-3.0	-0.9		2253	-1.1	-0.3
2	0708	10.2	3.1	17	0659	9.2	2.8
F	1159	7.1	2.2	Sa	1214	6.4	2.0
	1630	8.4	2.6		1615	7.1	2.2
	2344	-2.2	-0.7		2325	-0.6	-0.2
3	0746	10.1	3.1	18	0724	9.1	2.8
Sa	1308	6.3	1.9	Su	1259	5.8	1.8
	1736	7.6	2.3		1711	6.7	2.0
					2357	0.1	0.0
4	0029	-1.0	-0.3	19	0748	9.1	2.8
Su	0822	9.9	3.0	M	1345	5.1	1.6
	1424	5.3	1.6		1810	6.1	1.9
	1855	6.7	2.0				
5	0115	0.5	0.2	20	0029	1.2	0.4
M	0857	9.8	3.0	Tu	0811	9.1	2.8
	1529	4.1	1.2		1427	4.2	1.3
	2025	5.9	1.8		1926	5.7	1.7
6	0203	2.2	0.7	21	0100	2.5	0.8
Tu	0933	9.6	2.9	W	0834	9.1	2.8
	1632	3.0	0.9		1518	3.1	0.9
	2217	5.6	1.7		2104	5.4	1.6
7	0255	3.8	1.2	22	0132	3.9	1.2
W	1002	9.3	2.8	Th	0857	9.1	2.8
	1721	1.9	0.6		1600	2.0	0.6
					2324	5.7	1.7
8	0030	6.0	1.8	23	0204	5.4	1.6
Th	0354	5.4	1.6	F	0917	9.2	2.8
	1030	9.1	2.8		1653	0.8	0.2
	1803	1.0	0.3				
9	0224	7.0	2.1	24	0939	9.3	2.8
F	0511	6.6	2.0	Sa	1742	-0.3	-0.1
	1052	8.8	2.7				
	1843	0.3	0.1				
10	0323	8.0	2.4	25	1012	9.4	2.9
Sa	0636	7.4	2.3	Su	1834	-1.3	-0.4
	1115	8.5	2.6				
	1917	-0.2	-0.1				
11	0405	8.7	2.7	26	0345	8.9	2.7
Su	0800	7.8	2.4	M	0636	8.5	2.6
	1134	8.3	2.5		1057	9.4	2.9
	1954	-0.6	-0.2		1926	-2.0	-0.6
12	0443	9.2	2.8	27	0418	9.5	2.9
M	0903	7.9	2.4	Tu	0754	8.4	2.6
	1204	8.1	2.5		1206	9.4	2.9
	2029	-0.9	-0.3		2016	-2.5	-0.8
13	0515	9.3	2.8	28	0450	9.8	3.0
Tu	0956	7.8	2.4	W	0853	8.0	2.4
	1248	8.0	2.4		1321	9.3	2.8
	2104	-1.2	-0.4		2108	-2.7	-0.8
14	0543	9.4	2.9	29	0525	9.9	3.0
W	1031	7.5	2.3	Th	0948	7.4	2.3
	1342	7.9	2.4		1437	9.0	2.7
	2139	-1.3	-0.4		2154	-2.5	-0.8
15	0609	9.3	2.8	30	0557	9.9	3.0
Th	1103	7.3	2.2	F	1041	6.5	2.0
	1434	7.7	2.3		1545	8.7	2.7
	2215	-1.3	-0.4		2240	-1.8	-0.5
				31	0629	9.8	3.0
				Sa	1137	5.5	1.7
					1650	8.1	2.5
					2326	-0.8	-0.2

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0658	9.7	3.0	16	0625	8.8	2.7
Su	1229	4.5	1.4	M	1200	3.9	1.2
	1759	7.4	2.3		1736	6.7	2.0
					2331	1.4	0.4
2	0007	0.5	0.2	17	0644	8.8	2.7
M	0727	9.6	2.9	Tu	1240	3.0	0.9
	1326	3.5	1.1		1839	6.4	2.0
	1908	6.7	2.0				
3	0049	2.0	0.6	18	0003	2.6	0.8
Tu	0755	9.4	2.9	W	0706	8.8	2.7
	1423	2.6	0.8		1321	2.1	0.6
	2032	6.2	1.9		1953	6.3	1.9
4	0131	3.6	1.1	19	0035	4.0	1.2
W	0822	9.1	2.8	Th	0725	8.8	2.7
	1516	1.9	0.6		1409	1.3	0.4
	2219	6.1	1.9		2126	6.3	1.9
5	0216	5.1	1.6	20	0103	5.4	1.6
Th	0845	8.8	2.7	F	0744	8.9	2.7
	1611	1.3	0.4		1502	0.6	0.2
					2343	6.8	2.1
6	0039	6.7	2.0	21	0139	6.7	2.0
F	0322	6.4	2.0	Sa	0806	8.9	2.7
	0911	8.5	2.6		1603	-0.1	0.0
	1702	0.8	0.2				
7	0215	7.6	2.3	22	0838	8.9	2.7
Sa	0505	7.3	2.2	Su	1706	-0.6	-0.2
	0934	8.2	2.5				
	1754	0.5	0.2				
8	0304	8.4	2.6	23	0245	8.5	2.6
Su	0657	7.7	2.3	M	0528	8.2	2.5
	1001	8.0	2.4		0929	8.8	2.7
	1840	0.2	0.1		1811	-1.1	-0.3
9	0342	8.8	2.7	24	0314	9.0	2.7
M	0819	7.6	2.3	Tu	0701	8.1	2.5
	1046	7.7	2.3		1051	8.6	2.6
	1925	-0.1	0.0		1912	-1.4	-0.4
10	0415	9.0	2.7	25	0343	9.3	2.8
Tu	0911	7.4	2.3	W	0805	7.5	2.3
	1159	7.6	2.3		1227	8.5	2.6
	2009	-0.3	-0.1		2005	-1.5	-0.5
11	0441	9.0	2.7	26	0412	9.3	2.8
W	0937	7.0	2.1	Th	0855	6.6	2.0
	1311	7.5	2.3		1353	8.4	2.6
	2048	-0.5	-0.2		2056	-1.4	-0.4
12	0505	8.9	2.7	27	0441	9.3	2.8
Th	1006	6.6	2.0	F	0937	5.5	1.7
	1407	7.5	2.3		1504	8.3	2.5
	2123	-0.6	-0.2		2142	-0.8	-0.2
13	0525	8.8	2.7	28	0509	9.2	2.8
F	1024	6.1	1.9	Sa	1022	4.4	1.3
	1459	7.4	2.3		1608	8.1	2.5
	2159	-0.5	-0.2		2224	0.0	0.0
14	0545	8.8	2.7				
Sa	1053	5.5	1.7				
	1551	7.2	2.2				
	2229	-0.2	-0.1				
15	0605	8.8	2.7				
Su	1125	4.7	1.4				
	1640	7.0	2.1				
	2301	0.5	0.2				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0534	9.1	2.8	16	0459	8.3	2.5
Su	1106	3.3	1.0	M	1041	2.4	0.7
	1711	7.8	2.4		1704	7.1	2.2
	2303	1.1	0.3		2233	2.3	0.7
2	0602	9.0	2.7	17	0518	8.3	2.5
M	1149	2.3	0.7	Tu	1116	1.4	0.4
	1813	7.4	2.3		1800	7.1	2.2
	2341	2.4	0.7		2305	3.3	1.0
3	0624	8.8	2.7	18	0536	8.4	2.6
Tu	1235	1.5	0.5	W	1152	0.5	0.2
	1918	7.1	2.2		1905	7.2	2.2
					2344	4.5	1.4
4	0024	3.7	1.1	19	0558	8.4	2.6
W	0647	8.6	2.6	Th	1238	-0.2	-0.1
	1321	1.0	0.3		2015	7.3	2.2
	2034	6.9	2.1				
5	0106	5.0	1.5	20	0023	5.6	1.7
Th	0710	8.3	2.5	F	0617	8.4	2.6
	1406	0.7	0.2		1327	-0.6	-0.2
	2209	7.0	2.1		2141	7.4	2.3
6	0204	6.1	1.9	21	0108	6.7	2.0
F	0729	8.0	2.4	Sa	0642	8.4	2.6
	1458	0.7	0.2		1422	-0.7	-0.2
					2331	7.8	2.4
7	0006	7.3	2.2	22	0217	7.5	2.3
Sa	0330	6.9	2.1	Su	0706	8.3	2.5
	0753	7.7	2.3		1526	-0.7	-0.2
	1554	0.7	0.2				
8	0136	7.9	2.4	23	0057	8.3	2.5
Su	0550	7.2	2.2	M	0440	7.8	2.4
	0819	7.4	2.3		0757	8.0	2.4
	1657	0.7	0.2		1638	-0.6	-0.2
9	0221	8.3	2.5	24	0147	8.6	2.6
M	1759	0.7	0.2	Tu	0630	7.4	2.3
					0930	7.6	2.3
					1748	-0.6	-0.2
10	0259	8.4	2.6	25	0221	8.8	2.7
Tu	0815	6.7	2.0	W	0725	6.6	2.0
	1039	6.8	2.1		1130	7.4	2.3
	1853	0.5	0.2		1853	-0.4	-0.1
11	0327	8.5	2.6	26	0254	8.8	2.7
W	0840	6.3	1.9	Th	0806	5.6	1.7
	1210	6.8	2.1		1309	7.3	2.2
	1941	0.4	0.1		1945	0.0	0.0
12	0348	8.4	2.6	27	0323	8.8	2.7
Th	0901	5.7	1.7	F	0845	4.4	1.3
	1327	6.8	2.1		1425	7.5	2.3
	2023	0.3	0.1		2034	0.5	0.2
13	0407	8.3	2.5	28	0348	8.7	2.7
F	0927	5.1	1.6	Sa	0924	3.1	0.9
	1425	6.9	2.1		1532	7.6	2.3
	2058	0.4	0.1		2117	1.3	0.4
14	0425	8.3	2.5	29	0413	8.6	2.6
Sa	0947	4.3	1.3	Su	0959	1.9	0.6
	1519	7.0	2.1		1633	7.6	2.3
	2133	0.8	0.2		2159	2.3	0.7
15	0440	8.3	2.5	30	0435	8.5	2.6
Su	1012	3.3	1.0	M	1035	0.9	0.3
	1611	7.0	2.1		1731	7.7	2.3
	2205	1.4	0.4		2240	3.4	1.0
				31	0456	8.3	2.5
				Tu	1111	0.1	0.0
					1827	7.7	2.3
					2322	4.4	1.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0516	8.1	2.5	16	0429	8.2	2.5
W	1146	-0.4	-0.1	Th	1122	-1.8	-0.5
	1926	7.7	2.3		1921	8.2	2.5
					2335	6.2	1.9
2	0004	5.3	1.6	17	0451	8.2	2.5
Th	0536	7.8	2.4	F	1206	-2.1	-0.6
	1227	-0.5	-0.2		2026	8.3	2.5
	2032	7.7	2.3				
3	0103	6.1	1.9	18	0026	6.9	2.1
F	0554	7.5	2.3	Sa	0517	8.2	2.5
	1308	-0.4	-0.1		1258	-2.0	-0.6
	2148	7.7	2.3		2139	8.4	2.6
4	0224	6.7	2.0	19	0140	7.3	2.2
Sa	0615	7.2	2.2	Su	0549	7.9	2.4
	1355	0.0	0.0		1355	-1.6	-0.5
	2314	7.8	2.4		2255	8.5	2.6
5	0433	6.8	2.1	20	0355	7.3	2.2
Su	0635	6.9	2.1	M	0636	7.5	2.3
	1454	0.4	0.1		1500	-1.0	-0.3
					2358	8.7	2.7
6	0025	7.9	2.4	21	0549	6.7	2.0
M	1601	0.7	0.2	Tu	0809	6.9	2.1
					1613	-0.4	-0.1
7	0117	8.0	2.4	22	0044	8.7	2.7
Tu	1708	0.9	0.3	W	0645	5.8	1.8
					1015	6.3	1.9
					1718	0.3	0.1
8	0152	8.1	2.5	23	0123	8.7	2.7
W	0746	5.6	1.7	Th	0717	4.6	1.4
	1039	5.8	1.8		1212	6.2	1.9
	1809	1.1	0.3		1824	1.0	0.3
9	0218	8.0	2.4	24	0155	8.6	2.6
Th	0807	4.9	1.5	F	0755	3.3	1.0
	1222	5.8	1.8		1343	6.5	2.0
	1901	1.2	0.4		1917	1.9	0.6
10	0237	7.9	2.4	25	0221	8.5	2.6
F	0826	4.1	1.2	Sa	0831	2.0	0.6
	1338	6.0	1.8		1457	6.9	2.1
	1943	1.5	0.5		2005	2.8	0.9
11	0254	7.9	2.4	26	0245	8.4	2.6
Sa	0844	3.2	1.0	Su	0859	0.8	0.2
	1440	6.3	1.9		1559	7.3	2.2
	2019	2.0	0.6		2054	3.7	1.1
12	0312	7.9	2.4	27	0307	8.2	2.5
Su	0909	2.1	0.6	M	0931	-0.2	-0.1
	1537	6.7	2.0		1657	7.7	2.3
	2055	2.7	0.8		2139	4.6	1.4
13	0330	8.0	2.4	28	0325	8.0	2.4
M	0934	0.9	0.3	Tu	1003	-1.0	-0.3
	1631	7.1	2.2		1750	8.0	2.4
	2130	3.5	1.1		2225	5.4	1.6
14	0348	8.0	2.4	29	0343	7.8	2.4
Tu	1006	-0.2	-0.1	W	1035	-1.5	-0.5
	1726	7.5	2.3		1839	8.2	2.5
	2211	4.4	1.3		2310	6.0	1.8
15	0406	8.1	2.5	30	0358	7.6	2.3
W	1042	-1.2	-0.4	Th	1107	-1.6	-0.5
	1821	7.9	2.4		1931	8.3	2.5
	2250	5.3	1.6				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0003	6.5	2.0	16	0354	8.3	2.5
F	0416	7.3	2.2	Sa	1147	-3.2	-1.0
	1145	-1.5	-0.5		2021	9.1	2.8
	2020	8.3	2.5				
2	0121	6.7	2.0	17	0043	7.4	2.3
Sa	0435	7.0	2.1	Su	0436	8.0	2.4
	1227	-1.2	-0.4		1241	-2.7	-0.8
	2119	8.2	2.5		2117	9.1	2.8
3	1314	-0.7	-0.2	18	0225	7.1	2.2
Su	2218	8.1	2.5	M	0540	7.4	2.3
					1337	-1.9	-0.6
					2211	9.0	2.7
4	1406	-0.1	0.0	19	0418	6.4	2.0
M	2313	8.1	2.5	Tu	0705	6.6	2.0
					1438	-0.9	-0.3
					2300	9.0	2.7
5	1506	0.5	0.2	20	0524	5.3	1.6
Tu	2354	8.0	2.4	W	0854	5.8	1.8
					1540	0.3	0.1
					2342	8.9	2.7
6	0645	5.2	1.6	21	0612	4.0	1.2
W	0827	5.3	1.6	Th	1054	5.4	1.6
	1607	1.1	0.3		1646	1.5	0.5
7	0027	8.0	2.4	22	0019	8.8	2.7
Th	0706	4.5	1.4	F	0656	2.6	0.8
	1030	4.9	1.5		1245	5.6	1.7
	1706	1.7	0.5		1746	2.8	0.9
8	0051	7.9	2.4	23	0048	8.6	2.6
F	0725	3.6	1.1	Sa	0730	1.3	0.4
	1224	5.0	1.5		1416	6.2	1.9
	1802	2.3	0.7		1844	3.9	1.2
9	0113	7.9	2.4	24	0115	8.5	2.6
Sa	0743	2.5	0.8	Su	0802	0.1	0.0
	1349	5.5	1.7		1525	6.9	2.1
	1848	3.1	0.9		1936	5.0	1.5
10	0133	7.9	2.4	25	0138	8.2	2.5
Su	0805	1.3	0.4	M	0834	-0.8	-0.2
	1457	6.2	1.9		1624	7.6	2.3
	1933	3.9	1.2		2032	5.8	1.8
11	0148	8.0	2.4	26	0154	8.0	2.4
M	0830	0.0	0.0	Tu	0901	-1.5	-0.5
	1557	6.9	2.1		1713	8.2	2.5
	2018	4.7	1.4		2125	6.4	2.0
12	0210	8.1	2.5	27	0209	7.8	2.4
Tu	0859	-1.2	-0.4	W	0933	-1.9	-0.6
	1549	7.7	2.3		1758	8.5	2.6
	2100	5.6	1.7		2218	6.8	2.1
13	0231	8.2	2.5	28	0227	7.6	2.3
W	0934	-2.3	-0.7	Th	1005	-2.1	-0.6
	1741	8.3	2.5		1844	8.7	2.7
	2146	6.3	1.9		2314	6.9	2.1
14	0257	8.3	2.5	29	0245	7.4	2.3
Th	1013	-3.0	-0.9	F	1041	-2.1	-0.6
	1833	8.7	2.7		1922	8.7	2.7
	2238	6.8	2.1				
15	0322	8.4	2.6	30	0017	6.9	2.1
F	1058	-3.3	-1.0	Sa	0307	7.2	2.2
	1926	9.0	2.7		1119	-1.9	-0.6
	2334	7.2	2.2		2001	8.6	2.6
				31	0135	6.8	2.1
				Su	0342	6.9	2.1
					1158	-1.6	-0.5
					2040	8.5	2.6

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1242	-1.0	-0.3	16	0212	6.1	1.9
M	2123	8.4	2.6	Tu	0610	6.9	2.1
					1320	-1.5	-0.5
					2125	9.2	2.8
2	1328	-0.4	-0.1	17	0339	5.0	1.5
Tu	2202	8.3	2.5	W	0737	6.0	1.8
					1412	-0.1	0.0
					2204	9.1	2.8
3	1412	0.4	0.1	18	0441	3.7	1.1
W	2234	8.2	2.5	Th	0920	5.3	1.6
					1508	1.5	0.5
					2238	9.0	2.7
4	0542	4.5	1.4	19	0533	2.4	0.7
Th	0825	4.7	1.4	F	1121	5.1	1.6
	1502	1.4	0.4		1605	3.0	0.9
	2303	8.2	2.5		2313	8.8	2.7
5	0607	3.5	1.1	20	0618	1.1	0.3
F	1025	4.4	1.3	Sa	1315	5.7	1.7
	1553	2.5	0.8		1709	4.5	1.4
	2326	8.1	2.5		2340	8.6	2.6
6	0629	2.4	0.7	21	0657	0.1	0.0
Sa	1231	4.7	1.4	Su	1444	6.7	2.0
	1649	3.6	1.1		1815	5.7	1.7
	2349	8.2	2.5				
7	0651	1.1	0.3	22	0007	8.4	2.6
Su	1407	5.5	1.7	M	0733	-0.7	-0.2
	1742	4.7	1.4		1547	7.5	2.3
					1918	6.5	2.0
8	0007	8.2	2.5	23	0029	8.1	2.5
M	0721	-0.2	-0.1	Tu	0805	-1.3	-0.4
	1520	6.6	2.0		1639	8.2	2.5
	1840	5.7	1.7		2027	7.0	2.1
9	0032	8.4	2.6	24	0045	7.9	2.4
Tu	0754	-1.5	-0.5	W	0836	-1.7	-0.5
	1612	7.5	2.3		1718	8.6	2.6
	1939	6.5	2.0		2132	7.2	2.2
10	0054	8.5	2.6	25	0103	7.7	2.3
W	0830	-2.6	-0.8	Th	0911	-1.9	-0.6
	1701	8.4	2.6		1753	8.7	2.7
	2035	7.1	2.2		2225	7.2	2.2
11	0122	8.7	2.7	26	0131	7.5	2.3
Th	0911	-3.4	-1.0	F	0944	-2.0	-0.6
	1743	8.9	2.7		1828	8.7	2.7
	2130	7.4	2.3		2312	7.0	2.1
12	0201	8.7	2.7	27	0209	7.3	2.2
F	0957	-3.9	-1.2	Sa	1021	-2.0	-0.6
	1828	9.3	2.8		1900	8.6	2.6
	2229	7.5	2.3		2357	6.8	2.1
13	0251	8.6	2.6	28	0258	7.0	2.1
Sa	1044	-3.9	-1.2	Su	1100	-1.9	-0.6
	1914	9.4	2.9		1927	8.5	2.6
	2333	7.4	2.3				
14	0345	8.3	2.5	29	0047	6.4	2.0
Su	1133	-3.5	-1.1	M	0351	6.7	2.0
	1959	9.4	2.9		1137	-1.5	-0.5
					1959	8.4	2.6
15	0047	6.9	2.1	30	0142	6.0	1.8
M	0451	7.7	2.3	Tu	0443	6.2	1.9
	1226	-2.7	-0.8		1216	-1.0	-0.3
	2043	9.3	2.8		2025	8.4	2.6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0245	5.4	1.6	16	0243	3.4	1.0
W	0548	5.7	1.7	Th	0758	5.8	1.8
	1251	-0.1	0.0		1344	1.3	0.4
	2054	8.4	2.6		2102	9.0	2.7
2	0330	4.6	1.4	17	0342	2.3	0.7
Th	0657	5.1	1.6	F	0937	5.4	1.6
	1330	0.9	0.3		1433	3.0	0.9
	2121	8.3	2.5		2135	8.8	2.7
3	0414	3.7	1.1	18	0440	1.2	0.4
F	0828	4.6	1.4	Sa	1140	5.6	1.7
	1405	2.1	0.6		1531	4.6	1.4
	2144	8.3	2.5		2204	8.5	2.6
4	0451	2.6	0.8	19	0533	0.4	0.1
Sa	1026	4.5	1.4	Su	1337	6.4	2.0
	1447	3.5	1.1		1645	5.9	1.8
	2207	8.3	2.5		2233	8.2	2.5
5	0525	1.4	0.4	20	0616	-0.3	-0.1
Su	1253	5.1	1.6	M	1453	7.3	2.2
	1529	4.8	1.5		1808	6.7	2.0
	2229	8.4	2.6		2259	7.9	2.4
6	0600	0.1	0.0	21	0657	-0.7	-0.2
M	1439	6.2	1.9	Tu	1545	8.0	2.4
	1642	6.1	1.9		1933	7.1	2.2
	2251	8.5	2.6		2326	7.7	2.3
7	0639	-1.1	-0.3	22	0736	-1.0	-0.3
Tu	1535	7.3	2.2	W	1622	8.4	2.6
	1804	7.0	2.1		2046	7.1	2.2
	2316	8.7	2.7				
8	0722	-2.1	-0.6	23	0000	7.5	2.3
W	1617	8.2	2.5	Th	0816	-1.2	-0.4
	1917	7.5	2.3		1657	8.6	2.6
	2355	8.8	2.7		2133	7.0	2.1
9	0808	-3.0	-0.9	24	0050	7.3	2.2
Th	1654	8.8	2.7	F	0853	-1.4	-0.4
	2021	7.7	2.3		1727	8.5	2.6
					2211	6.7	2.0
10	0048	8.9	2.7	25	0142	7.2	2.2
F	0856	-3.6	-1.1	Sa	0929	-1.5	-0.5
	1730	9.1	2.8		1756	8.4	2.6
	2120	7.6	2.3		2243	6.4	2.0
11	0149	8.8	2.7	26	0234	7.1	2.2
Sa	0944	-3.8	-1.2	Su	1004	-1.5	-0.5
	1808	9.2	2.8		1818	8.3	2.5
	2220	7.1	2.2		2312	6.0	1.8
12	0258	8.6	2.6	27	0323	6.9	2.1
Su	1032	-3.5	-1.1	M	1043	-1.3	-0.4
	1844	9.3	2.8		1842	8.2	2.5
	2319	6.5	2.0		2351	5.4	1.6
13	0407	8.1	2.5	28	0415	6.6	2.0
M	1121	-2.9	-0.9	Tu	1115	-0.9	-0.3
	1919	9.2	2.8		1903	8.2	2.5
14	0023	5.6	1.7	29	0033	4.8	1.5
Tu	0517	7.4	2.3	W	0511	6.2	1.9
	1209	-1.8	-0.5		1150	-0.2	-0.1
	1955	9.2	2.8		1926	8.2	2.5
15	0133	4.6	1.4	30	0115	4.1	1.2
W	0636	6.6	2.0	Th	0607	5.7	1.7
	1255	-0.4	-0.1		1219	0.8	0.2
	2030	9.1	2.8		1949	8.2	2.5
				31	0157	3.3	1.0
				F	0716	5.3	1.6
					1251	2.1	0.6
					2012	8.2	2.5

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0242	2.4	0.7	16	0338	0.5	0.2
Sa	0844	5.1	1.6	Su	1148	6.4	2.0
	1323	3.4	1.0		1521	5.8	1.8
	2033	8.2	2.5		2054	7.8	2.4
2	0328	1.4	0.4	17	0433	0.2	0.1
Su	1037	5.2	1.6	M	1325	7.2	2.2
	1348	4.8	1.5		1659	6.6	2.0
	2054	8.2	2.5		2125	7.5	2.3
3	0419	0.5	0.2	18	0527	0.0	0.0
M	2116	8.3	2.5	Tu	1427	7.8	2.4
					1840	6.8	2.1
					2203	7.2	2.2
4	0512	-0.5	-0.2	19	0622	-0.1	0.0
Tu	2145	8.5	2.6	W	1514	8.2	2.5
					2000	6.7	2.0
					2300	7.0	2.1
5	0604	-1.3	-0.4	20	0709	-0.3	-0.1
W	1523	7.9	2.4	Th	1548	8.3	2.5
	1759	7.6	2.3		2042	6.4	2.0
	2233	8.6	2.6				
6	0658	-2.1	-0.6	21	0009	6.8	2.1
Th	1553	8.4	2.6	F	0754	-0.4	-0.1
	1917	7.6	2.3		1616	8.2	2.5
	2339	8.6	2.6		2114	6.1	1.9
7	0751	-2.6	-0.8	22	0112	6.8	2.1
F	1629	8.7	2.7	Sa	0836	-0.6	-0.2
	2016	7.3	2.2		1642	8.1	2.5
					2139	5.7	1.7
8	0055	8.6	2.6	23	0207	6.8	2.1
Sa	0842	-2.9	-0.9	Su	0911	-0.6	-0.2
	1655	8.9	2.7		1703	8.0	2.4
	2112	6.6	2.0		2201	5.1	1.6
9	0211	8.5	2.6	24	0300	6.8	2.1
Su	0931	-2.8	-0.9	M	0943	-0.5	-0.2
	1730	8.9	2.7		1721	7.9	2.4
	2204	5.7	1.7		2233	4.4	1.3
10	0323	8.3	2.5	25	0348	6.7	2.0
M	1020	-2.3	-0.7	Tu	1019	-0.1	0.0
	1759	8.9	2.7		1740	7.9	2.4
	2259	4.7	1.4		2301	3.7	1.1
11	0432	7.8	2.4	26	0437	6.5	2.0
Tu	1103	-1.3	-0.4	W	1047	0.5	0.2
	1830	8.8	2.7		1759	7.9	2.4
	2352	3.6	1.1		2337	2.9	0.9
12	0538	7.3	2.2	27	0533	6.3	1.9
W	1148	-0.1	0.0	Th	1119	1.4	0.4
	1900	8.8	2.7		1819	7.9	2.4
13	0048	2.6	0.8	28	0012	2.1	0.6
Th	0650	6.7	2.0	F	0629	6.2	1.9
	1232	1.5	0.5		1150	2.5	0.8
	1929	8.6	2.6		1839	7.9	2.4
14	0143	1.7	0.5	29	0051	1.4	0.4
F	0809	6.2	1.9	Sa	0737	6.1	1.9
	1318	3.0	0.9		1218	3.8	1.2
	1957	8.5	2.6		1858	7.9	2.4
15	0241	1.0	0.3	30	0136	0.7	0.2
Sa	0949	6.1	1.9	Su	0903	6.1	1.9
	1407	4.5	1.4		1254	5.0	1.5
	2026	8.2	2.5		1923	7.9	2.4
				31	0225	0.1	0.0
				M	1049	6.4	2.0
					1326	6.1	1.9
					1941	7.9	2.4

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0324	-0.3	-0.1	16	0434	0.5	0.2
Tu	2007	8.0	2.4	W	1341	8.0	2.4
					1915	6.2	1.9
					2115	6.3	1.9
2	0429	-0.7	-0.2	17	0537	0.6	0.2
W	1411	7.8	2.4	Th	1427	8.1	2.5
	1706	7.5	2.3		1955	5.9	1.8
	2056	8.0	2.4		2258	6.2	1.9
3	0535	-1.1	-0.3	18	0635	0.5	0.2
Th	1440	8.2	2.5	F	1455	8.0	2.4
	1834	7.3	2.2		2023	5.4	1.6
	2221	7.9	2.4				
4	0638	-1.4	-0.4	19	0024	6.2	1.9
F	1512	8.5	2.6	Sa	0725	0.5	0.2
	1936	6.7	2.0		1521	7.9	2.4
	2358	7.8	2.4		2042	4.8	1.5
5	0734	-1.6	-0.5	20	0130	6.3	1.9
Sa	1541	8.5	2.6	Su	0806	0.6	0.2
	2018	5.9	1.8		1539	7.8	2.4
					2107	4.2	1.3
6	0130	7.9	2.4	21	0226	6.5	2.0
Su	0827	-1.5	-0.5	M	0845	0.8	0.2
	1609	8.5	2.6		1556	7.7	2.3
	2103	4.7	1.4		2129	3.3	1.0
7	0243	7.9	2.4	22	0317	6.6	2.0
M	0915	-1.0	-0.3	Tu	0917	1.2	0.4
	1636	8.5	2.6		1612	7.7	2.3
	2149	3.5	1.1		2154	2.5	0.8
8	0348	7.9	2.4	23	0408	6.7	2.0
Tu	0957	-0.1	0.0	W	0949	1.8	0.5
	1703	8.5	2.6		1631	7.7	2.3
	2231	2.3	0.7		2222	1.5	0.5
9	0454	7.7	2.3	24	0458	6.9	2.1
W	1039	1.0	0.3	Th	1021	2.6	0.8
	1729	8.4	2.6		1648	7.7	2.3
	2320	1.3	0.4		2251	0.7	0.2
10	0557	7.5	2.3	25	0553	7.0	2.1
Th	1125	2.3	0.7	F	1052	3.6	1.1
	1756	8.3	2.5		1706	7.7	2.3
					2326	-0.1	0.0
11	0002	0.5	0.2	26	0649	7.1	2.2
F	0705	7.2	2.2	Sa	1124	4.6	1.4
	1210	3.6	1.1		1727	7.7	2.3
	1822	8.1	2.5				
12	0050	0.0	0.0	27	0005	-0.6	-0.2
Sa	0817	7.1	2.2	Su	0755	7.3	2.2
	1300	4.8	1.5		1206	5.6	1.7
	1846	7.8	2.4		1742	7.8	2.4
13	0136	-0.1	0.0	28	0052	-0.9	-0.3
Su	0943	7.1	2.2	M	0911	7.4	2.3
	1405	5.9	1.8		1249	6.5	2.0
	1911	7.4	2.3		1800	7.8	2.4
14	0232	0.0	0.0	29	0145	-1.0	-0.3
M	1123	7.4	2.3	Tu	1044	7.7	2.3
	1548	6.5	2.0		1404	7.2	2.2
	1939	7.0	2.1		1821	7.7	2.3
15	0329	0.2	0.1	30	0247	-0.9	-0.3
Tu	1245	7.7	2.3	W	1209	8.0	2.4
	1757	6.5	2.0		1637	7.4	2.3
	2013	6.7	2.0		1900	7.5	2.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

PORT TOWNSEND, WASHINGTON, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m
1	0358	-0.7	-0.2
Th	1309	8.3	2.5
	1817	7.0	2.1
	2053	7.1	2.2
2	0511	-0.5	-0.2
F	1347	8.5	2.6
	1859	6.2	1.9
	2257	6.9	2.1
3	0617	-0.3	-0.1
Sa	1417	8.5	2.6
	1937	5.1	1.6
4	0039	7.0	2.1
Su	0715	0.1	0.0
	1445	8.5	2.6
	2013	3.8	1.2
5	0202	7.2	2.2
M	0804	0.7	0.2
	1512	8.5	2.6
	2050	2.5	0.8
6	0311	7.5	2.3
Tu	0853	1.6	0.5
	1536	8.4	2.6
	2127	1.2	0.4
7	0416	7 °	2.4
W	0935	2.6	0.8
	1601	8.3	2.5
	2208	0.1	0.0
8	0515	7.9	2.4
Th	1021	3.6	1.1
	1624	8.2	2.5
	2244	-0.7	-0.2
9	0614	8.1	2.5
F	1104	4.7	1.4
	1645	8.0	2.4
	2322	-1.1	-0.3
10	0713	8.1	2.5
Sa	1155	5.6	1.7
	1707	7.7	2.3
11	0001	-1.2	-0.4
Su	0819	8.1	2.5
	1257	6.3	1.9
	1726	7.3	2.2
12	0047	-0.9	-0.3
M	0924	8.1	2.5
	1435	6.6	2.0
	1746	6.9	2.1
13	0135	-0.4	-0.1
Tu	1040	8.1	2.5
14	0230	0.2	0.1
W	1146	8.1	2.5
15	0334	0.7	0.2
Th	1241	8.2	2.5
16	0445	1.1	0.3
F	1318	8.1	2.5
	1933	5.0	1.5
	2253	5.4	1.6
17	0549	1.4	0.4
Sa	1347	8.0	2.4
	1947	4.3	1.3
18	0028	5.6	1.7
Su	0642	1.7	0.5
	1408	7.9	2.4
	2013	3.5	1.1
19	0142	5.9	1.8
M	0724	2.1	0.6
	1423	7.9	2.4
	2031	2.5	0.8
20	0242	6.3	1.9
Tu	0806	2.7	0.8
	1443	7.8	2.4
	2052	1.5	0.5
21	0335	6.7	2.0
W	0841	3.3	1.0
	1458	7.9	2.4
	2117	0.5	0.2
22	0427	7.2	2.2
Th	0917	4.1	1.2
	1515	7.9	2.4
	2146	-0.5	-0.2
23	0516	7.7	2.3
F	0952	4.9	1.5
	1533	8.0	2.4
	2218	-1.4	-0.4
24	0609	8.1	2.5
Sa	1031	5.8	1.8
	1550	8.0	2.4
	2254	-1.9	-0.6
25	0701	8.4	2.6
Su	1114	6.5	2.0
	1608	8.0	2.4
	2336	-2.2	-0.7
26	0800	8.5	2.6
M	1204	7.1	2.2
	1629	8.0	2.4
27	0023	-2.1	-0.6
Tu	0909	8.6	2.6
	1317	7.5	2.3
	1647	7.8	2.4
28	0119	-1.7	-0.5
W	1017	8.7	2.7
29	0220	-1.0	-0.3
Th	1117	8.8	2.7
30	0329	-0.3	-0.1
F	1203	8.8	2.7
	1825	5.8	1.8
	2132	6.2	1.9
31	0442	0.5	0.2
Sa	1243	8.8	2.7
	1853	4.6	1.4
	2339	6.1	1.9

NOVEMBER

Day	Time h m	Height ft	Height m
1	0547	1.4	0.4
Su	1318	8.8	2.7
	1925	3.2	1.0
2	0119	6.4	2.0
M	0646	2.3	0.7
	1344	8.8	2.7
	2000	1.8	0.5
3	0236	7.0	2.1
Tu	0739	3.3	1.0
	1411	8.7	2.7
	2036	0.4	0.1
4	0342	7.7	2.3
W	0827	4.3	1.3
	1433	8.5	2.6
	2108	-0.7	-0.2
5	0441	8.2	2.5
Th	0916	5.3	1.6
	1456	8.4	2.6
	2140	-1.4	-0.4
6	0537	8.6	2.6
F	1005	6.0	1.8
	1514	8.2	2.5
	2215	-1.9	-0.6
7	0626	8.9	2.7
Sa	1057	6.6	2.0
	1533	7.9	2.4
	2248	-1.9	-0.6
8	0716	9.0	2.7
Su	1157	6.9	2.1
	1547	7.6	2.3
	2326	-1.7	-0.5
9	0807	9.0	2.7
M	1321	7.1	2.2
	1601	7.3	2.2
10	0008	-1.2	-0.4
Tu	0859	8.8	2.7
11	0052	-0.6	-0.2
W	0951	8.7	2.7
12	0143	0.1	0.0
Th	1040	8.5	2.6
13	0239	0.8	0.2
F	1126	8.4	2.6
	1842	5.1	1.6
	2024	5.2	1.6
14	0342	1.6	0.5
Sa	1158	8.4	2.6
	1853	4.3	1.3
	2234	4.9	1.5
15	0443	2.3	0.7
Su	1224	8.3	2.5
	1912	3.4	1.0
16	0032	5.1	1.6
M	0542	3.1	0.9
	1245	8.3	2.5
	1930	2.3	0.7
17	0156	5.7	1.7
Tu	0624	4.0	1.2
	1302	8.3	2.5
	1949	1.2	0.4
18	0302	6.5	2.0
W	0717	4.8	1.5
	1320	8.3	2.5
	2017	0.0	0.0
19	0354	7.3	2.2
Th	0802	5.6	1.7
	1339	8.4	2.6
	2042	-1.1	-0.3
20	0443	8.1	2.5
F	0847	6.4	2.0
	1400	8.5	2.6
	2115	-2.0	-0.6
21	0528	8.7	2.7
Sa	0929	7.0	2.1
	1421	8.6	2.6
	2153	-2.7	-0.8
22	0617	9.2	2.8
Su	1018	7.4	2.3
	1443	8.6	2.6
	2231	-3.1	-0.9
23	0706	9.4	2.9
M	1112	7.7	2.3
	1515	8.6	2.6
	2317	-3.0	-0.9
24	0755	9.5	2.9
Tu	1215	7.8	2.4
	1556	8.3	2.5
25	0007	-2.6	-0.8
W	0847	9.5	2.9
	1345	7.6	2.3
	1645	7.8	2.4
26	0102	-1.8	-0.5
Th	0936	9.5	2.9
	1548	6.9	2.1
	1811	7.0	2.1
27	0158	-0.7	-0.2
F	1022	9.4	2.9
	1657	5.8	1.8
	2004	6.2	1.9
28	0300	0.5	0.2
Sa	1104	9.4	2.9
	1746	4.4	1.3
	2212	5.6	1.7
29	0403	1.9	0.6
Su	1140	9.3	2.8
	1824	3.0	0.9
30	0014	5.8	1.8
M	0508	3.3	1.0
	1212	9.2	2.8
	1903	1.5	0.5

DECEMBER

Day	Time h m	Height ft	Height m
1	0154	6.6	2.0
Tu	0612	4.7	1.4
	1240	9.1	2.8
	1940	0.3	0.1
2	0311	7.5	2.3
W	0713	5.8	1.8
	1305	8.9	2.7
	2012	-0.8	-0.2
3	0407	8.4	2.6
Th	0812	6.6	2.0
	1330	8.7	2.7
	2044	-1.5	-0.5
4	0500	9.0	2.7
F	0911	7.2	2.2
	1345	8.5	2.6
	2116	-1.9	-0.6
5	0545	9.4	2.9
Sa	1004	7.5	2.3
	1403	8.2	2.5
	2149	-2.0	-0.6
6	0626	9.5	2.9
Su	1104	7.6	2.3
	1418	8.0	2.4
	2225	-2.0	-0.6
7	0706	9.5	2.9
M	1204	7.5	2.3
	1450	7.7	2.3
	2301	-1.7	-0.5
8	0748	9.4	2.9
Tu	1319	7.3	2.2
	1522	7.4	2.3
	2343	-1.2	-0.4
9	0822	9.2	2.8
W			
10	0022	-0.6	-0.2
Th	0857	9.0	2.7
11	0105	0.1	0.0
F	0932	8.9	2.7
12	0150	1.1	0.3
Sa	1003	8.8	2.7
	1719	4.7	1.4
	2012	5.0	1.5
13	0236	2.1	0.6
Su	1032	8.7	2.7
	1751	3.7	1.1
	2217	4.7	1.4
14	0323	3.3	1.0
M	1055	8.7	2.7
	1815	2.6	0.8
15	0041	5.1	1.6
Tu	0412	4.6	1.4
	1118	8.7	2.7
	1841	1.5	0.5
16	0224	6.1	1.9
W	0518	5.7	1.7
	1139	8.7	2.7
	1907	0.3	0.1
17	0327	7.2	2.2
Th	0625	6.7	2.0
	1201	8.8	2.7
	1938	-0.9	-0.3
18	0412	8.2	2.5
F	0729	7.4	2.3
	1222	9.0	2.7
	2013	-1.9	-0.6
19	0451	8.9	2.7
Sa	0825	7.9	2.4
	1251	9.1	2.8
	2052	-2.7	-0.8
20	0530	9.5	2.9
Su	0916	8.2	2.5
	1328	9.2	2.8
	2134	-3.2	-1.0
21	0612	9.8	3.0
M	1009	8.2	2.5
	1420	9.1	2.8
	2220	-3.3	-1.0
22	0651	10.0	3.0
Tu	1104	8.0	2.4
	1515	8.9	2.7
	2306	-3.1	-0.9
23	0729	10.0	3.0
W	1210	7.5	2.3
	1618	8.4	2.6
	2355	-2.4	-0.7
24	0809	9.9	3.0
Th	1326	6.8	2.1
	1730	7.6	2.3
25	0043	-1.3	-0.4
F	0848	9.9	3.0
	1448	5.7	1.7
	1857	6.7	2.0
26	0134	0.2	0.1
Sa	0926	9.8	3.0
	1557	4.4	1.3
	2036	5.9	1.8
27	0224	1.9	0.6
Su	1002	9.7	3.0
	1700	3.0	0.9
	2241	5.6	1.7
28	0324	3.6	1.1
M	1034	9.6	2.9
	1747	1.7	0.5
29	0051	6.2	1.9
Tu	0429	5.3	1.6
	1105	9.4	2.9
	1830	0.5	0.2
30	0224	7.3	2.2
W	0545	6.6	2.0
	1134	9.1	2.8
	1909	-0.4	-0.1
31	0333	8.4	2.6
Th	0705	7.4	2.3
	1202	8.9	2.7
	1948	-1.0	-0.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

best copy available

SEATTLE, WASHINGTON, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m
1	0643	13.4	4.1
Th	1154	8.0	2.4
	1626	11.4	3.5
	2349	-3.3	-1.0
2	0725	13.5	4.1
F	1249	7.3	2.2
	1725	10.8	3.3
3	0035	-2.3	-0.7
Sa	0804	13.4	4.1
	1349	6.5	2.0
	1828	10.0	3.0
4	0123	-0.9	-0.3
Su	0843	13.2	4.0
	1448	5.5	1.7
	1944	9.1	2.8
5	0209	0.8	0.2
M	0922	12.9	3.9
	1550	4.4	1.3
	2108	8.3	2.5
6	0257	2.7	0.8
Tu	0959	12.5	3.8
	1652	3.2	1.0
	2247	8.0	2.4
7	0354	4.6	1.4
W	1036	12.0	3.7
	1751	2.1	0.6
8	0034	8.4	2.6
Th	0457	6.2	1.9
	1115	11.5	3.5
	1846	1.2	0.4
9	0207	9.2	2.8
F	0618	7.4	2.3
	1153	11.0	3.4
	1935	0.4	0.1
10	0315	10.2	3.1
Sa	0742	8.1	2.5
	1235	10.6	3.2
	2018	-0.2	-0.1
11	0411	11.0	3.4
Su	0852	8.4	2.6
	1314	10.3	3.1
	2059	-0.6	-0.2
12	0454	11.6	3.5
M	0945	8.4	2.6
	1353	10.2	3.1
	2135	-0.9	-0.3
13	0529	11.9	3.6
Tu	1027	8.3	2.5
	1435	10.2	3.1
	2209	-1.2	-0.4
14	0601	12.2	3.7
W	1105	8.1	2.5
	1517	10.2	3.1
	2243	-1.3	-0.4
15	0628	12.3	3.7
Th	1137	7.8	2.4
	1555	10.1	3.1
	2315	-1.2	-0.4

Day	Time h m	Height ft	Height m
16	0651	12.4	3.8
F	1213	7.4	2.3
	1641	10.0	3.0
	2351	-0.9	-0.3
17	0717	12.4	3.8
Sa	1248	6.8	2.1
	1723	9.8	3.0
18	0024	-0.4	-0.1
Su	0738	12.4	3.8
	1327	6.1	1.9
	1815	9.4	2.9
19	0058	0.5	0.2
M	0803	12.4	3.8
	1411	5.2	1.6
	1910	8.9	2.7
20	0133	1.6	0.5
Tu	0829	12.3	3.7
	1457	4.3	1.3
	2015	8.5	2.6
21	0215	3.0	0.9
W	0856	12.1	3.7
	1543	3.2	1.0
	2134	8.3	2.5
22	0257	4.6	1.4
Th	0925	11.9	3.6
	1635	2.1	0.6
	2307	8.4	2.6
23	0351	6.2	1.9
F	1000	11.7	3.6
	1731	0.9	0.3
24	0051	9.0	2.7
Sa	0500	7.6	2.3
	1040	11.5	3.5
	1830	-0.2	-0.1
25	0227	10.1	3.1
Su	0625	8.6	2.6
	1129	11.4	3.5
	1925	-1.3	-0.4
26	0333	11.2	3.4
M	0753	9.0	2.7
	1225	11.3	3.4
	2021	-2.2	-0.7
27	0421	12.0	3.7
Tu	0905	8.8	2.7
	1327	11.3	3.4
	2114	-2.8	-0.9
28	0500	12.7	3.9
W	1001	8.3	2.5
	1429	11.3	3.4
	2203	-3.1	-0.9
29	0539	13.1	4.0
Th	1053	7.5	2.3
	1535	11.3	3.4
	2249	-2.8	-0.9
30	0617	13.2	4.0
F	1142	6.5	2.0
	1635	11.1	3.4
	2334	-2.1	-0.6
31	0649	13.2	4.0
Sa	1228	5.5	1.7
	1737	10.6	3.2

FEBRUARY

Day	Time h m	Height ft	Height m
1	0019	-0.9	-0.3
Su	0721	13.1	4.0
	1316	4.5	1.4
	1839	10.0	3.0
2	0101	0.6	0.2
M	0751	12.8	3.9
	1409	3.5	1.1
	1947	9.4	2.9
3	0144	2.3	0.7
Tu	0824	12.4	3.8
	1501	2.7	0.8
	2101	8.9	2.7
4	0229	4.1	1.2
W	0856	11.9	3.6
	1553	2.1	0.6
	2229	8.6	2.6
5	0319	5.7	1.7
Th	0930	11.3	3.4
	1651	1.6	0.5
6	0012	8.8	2.7
F	0423	7.2	2.2
	1009	10.6	3.2
	1751	1.2	0.4
7	0145	9.5	2.9
Sa	0550	8.1	2.5
	1054	10.1	3.1
	1851	0.8	0.2
8	0254	10.3	3.1
Su	0732	8.4	2.6
	1146	9.7	3.0
	1943	0.4	0.1
9	0346	10.9	3.3
M	0851	8.3	2.5
	1242	9.6	2.9
	2033	0.0	0.0
10	0427	11.4	3.5
Tu	0939	8.0	2.4
	1337	9.6	2.9
	2111	-0.3	-0.1
11	0459	11.7	3.6
W	1011	7.7	2.3
	1429	9.7	3.0
	2149	-0.6	-0.2
12	0527	11.9	3.6
Th	1043	7.2	2.2
	1515	9.9	3.0
	2222	-0.6	-0.2
13	0548	12.0	3.7
F	1112	6.5	2.0
	1600	10.0	3.0
	2254	-0.4	-0.1
14	0607	12.0	3.7
Sa	1144	5.8	1.8
	1643	10.0	3.0
	2328	0.0	0.0
15	0622	12.1	3.7
Su	1215	4.9	1.5
	1731	9.9	3.0

Day	Time h m	Height ft	Height m
16	0000	0.7	0.2
M	0641	12.1	3.7
	1250	3.9	1.2
	1820	9.8	3.0
17	0033	1.7	0.5
Tu	0704	12.1	3.7
	1328	3.0	0.9
	1914	9.6	2.9
18	0111	3.0	0.9
W	0728	11.9	3.6
	1408	2.0	0.6
	2017	9.4	2.9
19	0150	4.4	1.3
Th	0755	11.7	3.6
	1454	1.2	0.4
	2129	9.2	2.8
20	0235	5.9	1.8
F	0827	11.5	3.5
	1546	0.6	0.2
	2259	9.2	2.8
21	0331	7.3	2.2
Sa	0901	11.2	3.4
	1647	0.0	0.0
22	0042	9.7	3.0
Su	0450	8.3	2.5
	0954	10.8	3.3
	1756	-0.5	-0.2
23	0215	10.5	3.2
M	0630	8.8	2.7
	1100	10.5	3.2
	1902	-1.1	-0.3
24	0310	11.3	3.4
Tu	0801	8.5	2.6
	1219	10.4	3.2
	2004	-1.5	-0.5
25	0355	12.0	3.7
W	0907	7.7	2.3
	1335	10.4	3.2
	2059	-1.8	-0.5
26	0431	12.4	3.8
Th	0956	6.7	2.0
	1445	10.6	3.2
	2147	-1.6	-0.5
27	0503	12.6	3.8
F	1041	5.4	1.6
	1550	10.7	3.3
	2233	-1.0	-0.3
28	0533	12.7	3.9
Sa	1120	4.2	1.3
	1649	10.7	3.3
	2318	-0.1	0.0

MARCH

Day	Time h m	Height ft	Height m
1	0602	12.6	3.8
Su	1202	3.1	0.9
	1748	10.6	3.2
	2358	1.2	0.4
2	0628	12.3	3.7
M	1244	2.1	0.6
	1846	10.3	3.1
3	0037	2.5	0.8
Tu	0655	12.0	3.7
	1326	1.5	0.5
	1945	10.0	3.0
4	0118	4.0	1.2
W	0723	11.5	3.5
	1410	1.1	0.3
	2051	9.6	2.9
5	0203	5.4	1.6
Th	0752	10.9	3.3
	1456	1.0	0.3
	2207	9.4	2.9
6	0255	6.6	2.0
F	0827	10.3	3.1
	1549	1.1	0.3
	2336	9.4	2.9
7	0359	7.6	2.3
Sa	0903	9.7	3.0
	1651	1.2	0.4
8	0106	9.8	3.0
Su	0540	8.1	2.5
	0954	9.1	2.8
	1755	1.2	0.4
9	0218	10.3	3.1
M	0733	8.0	2.4
	1104	8.8	2.7
	1901	1.0	0.3
10	0307	10.7	3.3
Tu	0839	7.6	2.3
	1223	8.7	2.7
	1956	0.7	0.2
11	0342	11.0	3.4
W	0914	7.0	2.1
	1329	8.9	2.7
	2042	0.5	0.2
12	0411	11.2	3.4
Th	0942	6.3	1.9
	1425	9.2	2.8
	2118	0.5	0.2
13	0431	11.3	3.4
F	1011	5.5	1.7
	1516	9.5	2.9
	2153	0.7	0.2
14	0450	11.4	3.5
Sa	1039	4.5	1.4
	1603	9.8	3.0
	2229	1.1	0.3
15	0504	11.5	3.5
Su	1105	3.5	1.1
	1648	10.1	3.1
	2301	1.7	0.5

Day	Time h m	Height ft	Height m
16	0521	11.5	3.5
M	1136	2.4	0.7
	1735	10.3	3.1
	2336	2.6	0.8
17	0543	11.6	3.5
Tu	1212	1.3	0.4
	1825	10.5	3.2
18	0013	3.6	1.1
W	0605	11.5	3.5
	1247	0.4	0.1
	1918	10.5	3.2
19	0052	4.7	1.4
Th	0630	11.4	3.5
	1329	-0.3	-0.1
	2018	10.4	3.2
20	0134	5.9	1.8
F	0703	11.2	3.4
	1415	-0.6	-0.2
	2128	10.2	3.1
21	0227	7.0	2.1
Sa	0741	10.8	3.3
	1513	-0.7	-0.2
	2254	10.2	3.1
22	0336	7.9	2.4
Su	0823	10.4	3.2
	1617	-0.6	-0.2
23	0030	10.5	3.2
M	0507	8.3	2.5
	0932	9.8	3.0
	1729	-0.5	-0.2
24	0137	11.0	3.4
Tu	0654	7.9	2.4
	1058	9.3	2.8
	1839	-0.4	-0.1
25	0230	11.5	3.5
W	0809	6.9	2.1
	1234	9.2	2.8
	1944	-0.3	-0.1
26	0310	11.8	3.6
Th	0858	5.6	1.7
	1357	9.5	2.9
	2041	0.0	0.0
27	0344	12.0	3.7
F	0940	4.2	1.3
	1507	9.9	3.0
	2129	0.6	0.2
28	0413	12.0	3.7
Sa	1019	2.9	0.9
	1611	10.3	3.1
	2217	1.4	0.4
29	0440	12.0	3.7
Su	1057	1.6	0.5
	1707	10.6	3.2
	2257	2.4	0.7
30	0506	11.7	3.6
M	1133	0.7	0.2
	1758	10.8	3.3
	2338	3.5	1.1
31	0530	11.4	3.5
Tu	1207	0.1	0.0
	1848	10.8	3.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0020	4.6	1.4	16	0510	11.2	3.4
W	0559	11.0	3.4	Th	1218	-1.8	-0.5
	1246	-0.2	-0.1		1924	11.4	3.5
	1943	10.7	3.3				
2	0102	5.6	1.7	17	0043	6.5	2.0
Th	0625	10.5	3.2	F	0545	11.0	3.4
	1325	-0.2	-0.1		1302	-2.1	-0.6
	2039	10.5	3.2		2026	11.3	3.4
3	0148	6.5	2.0	18	0134	7.2	2.2
F	0653	10.0	3.0	Sa	0621	10.7	3.3
	1407	0.0	0.0		1351	-2.0	-0.6
	2145	10.2	3.1		2135	11.2	3.4
4	0243	7.2	2.2	19	0235	7.8	2.4
Sa	0725	9.4	2.9	Su	0705	10.2	3.1
	1457	0.5	0.2		1448	-1.5	-0.5
	2257	10.1	3.1		2245	11.2	3.4
5	0353	7.7	2.3	20	0356	7.9	2.4
Su	0806	8.9	2.7	M	0808	9.4	2.9
	1554	0.9	0.3		1551	-0.8	-0.2
					2354	11.3	3.4
6	0013	10.2	3.1	21	0536	7.4	2.3
M	0538	7.8	2.4	Tu	0931	8.7	2.7
	0905	8.3	2.5		1700	-0.1	0.0
	1659	1.2	0.4				
7	0114	10.4	3.2	22	0050	11.5	3.5
Tu	0711	7.3	2.2	W	0655	6.3	1.9
	1031	7.9	2.4		1117	8.2	2.5
	1805	1.5	0.5		1813	0.7	0.2
8	0201	10.6	3.2	23	0138	11.7	3.6
W	0803	6.6	2.0	Th	0754	4.8	1.5
	1203	7.9	2.4		1300	8.4	2.6
	1904	1.6	0.5		1919	1.5	0.5
9	0236	10.8	3.3	24	0217	11.7	3.6
Th	0838	5.7	1.7	F	0839	3.2	1.0
	1323	8.1	2.5		1421	8.9	2.7
	1956	1.8	0.5		2015	2.3	0.7
10	0302	10.9	3.3	25	0249	11.7	3.6
F	0907	4.7	1.4	Sa	0918	1.8	0.5
	1423	8.6	2.6		1530	9.6	2.9
	2038	2.1	0.6		2106	3.2	1.0
11	0319	10.9	3.3	26	0318	11.6	3.5
Sa	0932	3.5	1.1	Su	0956	0.5	0.2
	1518	9.2	2.8		1629	10.3	3.1
	2117	2.6	0.8		2152	4.1	1.2
12	0337	11.0	3.4	27	0344	11.3	3.4
Su	1000	2.3	0.7	M	1028	-0.4	-0.1
	1606	9.8	3.0		1718	10.8	3.3
	2155	3.2	1.0		2239	4.9	1.5
13	0356	11.1	3.4	28	0409	11.0	3.4
M	1029	1.0	0.3	Tu	1103	-1.0	-0.3
	1655	10.4	3.2		1807	11.1	3.4
	2234	3.9	1.2		2323	5.7	1.7
14	0419	11.1	3.4	29	0435	10.7	3.3
Tu	1101	-0.2	-0.1	W	1136	-1.3	-0.4
	1742	10.9	3.3		1853	11.2	3.4
	2313	4.7	1.4				
15	0441	11.2	3.4	30	0005	6.3	1.9
W	1136	-1.2	-0.4	Th	0503	10.3	3.1
	1832	11.2	3.4		1211	-1.3	-0.4
	2355	5.6	1.7		1941	11.2	3.4

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0049	6.9	2.1	16	0036	7.6	2.3
F	0531	9.9	3.0	Sa	0509	10.9	3.3
	1250	-1.1	-0.3		1242	-3.3	-1.0
	2027	11.1	3.4		2025	12.2	3.7
2	0136	7.3	2.2	17	0136	7.8	2.4
Sa	0603	9.4	2.9	Su	0556	10.4	3.2
	1331	-0.7	-0.2		1334	-2.7	-0.8
	2122	11.0	3.4		2124	12.1	3.7
3	0234	7.5	2.3	18	0245	7.6	2.3
Su	0639	8.9	2.7	M	0657	9.6	2.9
	1416	-0.2	-0.1		1427	-1.8	-0.5
	2215	10.9	3.3		2218	12.1	3.7
4	0343	7.6	2.3	19	0405	7.0	2.1
M	0730	8.4	2.6	Tu	0813	8.6	2.6
	1507	0.5	0.2		1529	-0.5	-0.2
	2314	10.8	3.3		2312	12.0	3.7
5	0509	7.2	2.2	20	0527	5.8	1.8
Tu	0833	7.8	2.4	W	0952	7.9	2.4
	1603	1.1	0.3		1632	0.9	0.3
6	0005	10.8	3.3	21	0000	12.0	3.7
W	0625	6.5	2.0	Th	0636	4.3	1.3
	1006	7.3	2.2		1140	7.6	2.3
	1702	1.8	0.5		1737	2.2	0.7
7	0040	10.8	3.3	22	0042	11.9	3.6
Th	0714	5.5	1.7	F	0729	2.7	0.8
	1139	7.2	2.2		1322	8.1	2.5
	1802	2.5	0.8		1843	3.5	1.1
8	0112	10.9	3.3	23	0117	11.7	3.6
F	0749	4.3	1.3	Sa	0814	1.2	0.4
	1303	7.6	2.3		1443	8.9	2.7
	1858	3.2	1.0		1949	4.7	1.4
9	0138	10.8	3.3	24	0151	11.5	3.5
Sa	0821	3.0	0.9	Su	0853	0.0	0.0
	1416	8.3	2.5		1550	9.8	3.0
	1949	3.9	1.2		2044	5.6	1.7
10	0201	10.9	3.3	25	0220	11.2	3.4
Su	0849	1.6	0.5	M	0928	-0.9	-0.3
	1515	9.2	2.8		1641	10.5	3.2
	2037	4.7	1.4		2138	6.3	1.9
11	0225	10.9	3.3	26	0251	10.8	3.3
M	0921	0.2	0.1	Tu	1003	-1.5	-0.5
	1607	10.1	3.1		1730	11.1	3.4
	2123	5.4	1.6		2225	6.8	2.1
12	0251	11.0	3.4	27	0320	10.5	3.2
Tu	0955	-1.1	-0.3	W	1035	-1.8	-0.5
	1659	10.9	3.3		1812	11.4	3.5
	2209	6.1	1.9		2311	7.2	2.2
13	0320	11.1	3.4	28	0348	10.2	3.1
W	1031	-2.2	-0.7	Th	1110	-1.9	-0.6
	1745	11.5	3.5		1854	11.6	3.5
	2255	6.7	2.0		2354	7.4	2.3
14	0349	11.2	3.4	29	0420	9.9	3.0
Th	1110	-3.0	-0.9	F	1146	-1.8	-0.5
	1837	11.9	3.6		1933	11.6	3.5
	2344	7.3	2.2				
15	0428	11.1	3.4	30	0039	7.6	2.3
F	1155	-3.4	-1.0	Sa	0455	9.6	2.9
	1933	12.1	3.7		1222	-1.6	-0.5
					2013	11.6	3.5
				31	0126	7.6	2.3
				Su	0527	9.2	2.8
					1303	-1.2	-0.4
					2056	11.6	3.5

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0221	7.5	2.3	16	0237	6.6	2.0
M	0613	8.8	2.7	Tu	0705	9.2	2.8
	1344	-0.6	-0.2		1408	-1.3	-0.4
	2135	11.5	3.5		2140	12.6	3.8
2	0321	7.1	2.2	17	0349	5.5	1.7
Tu	0708	8.2	2.5	W	0828	8.3	2.5
	1428	0.2	0.1		1501	0.4	0.1
	2213	11.4	3.5		2222	12.4	3.8
3	0430	6.5	2.0	18	0458	4.1	1.2
W	0817	7.5	2.3	Th	1005	7.6	2.3
	1514	1.1	0.3		1559	2.2	0.7
	2249	11.3	3.4		2303	12.1	3.7
4	0522	5.5	1.7	19	0600	2.6	0.8
Th	0943	7.1	2.2	F	1153	7.6	2.3
	1603	2.2	0.7		1701	3.9	1.2
	2321	11.2	3.4		2342	11.8	3.6
5	0611	4.3	1.3	20	0658	1.2	0.4
F	1115	7.0	2.1	Sa	1332	8.3	2.5
	1658	3.4	1.0		1811	5.4	1.6
	2351	11.1	3.4				
6	0652	3.0	0.9	21	0019	11.4	3.5
Sa	1247	7.5	2.3	Su	0742	0.1	0.0
	1757	4.6	1.4		1455	9.2	2.8
					1923	6.5	2.0
7	0020	11.0	3.4	22	0058	11.0	3.4
Su	0731	1.5	0.5	M	0824	-0.8	-0.2
	1407	8.3	2.5		1554	10.1	3.1
	1859	5.6	1.7		2029	7.2	2.2
8	0048	11.0	3.4	23	0133	10.6	3.2
M	0806	0.1	0.0	Tu	0906	-1.3	-0.4
	1513	9.4	2.9		1646	10.8	3.3
	1959	6.5	2.0		2132	7.6	2.3
9	0120	11.1	3.4	24	0205	10.3	3.1
Tu	0845	-1.3	-0.4	W	0940	-1.7	-0.5
	1609	10.4	3.2		1730	11.3	3.4
	2054	7.2	2.2		2219	7.8	2.4
10	0153	11.2	3.4	25	0241	10.1	3.1
W	0924	-2.5	-0.8	Th	1015	-1.9	-0.6
	1701	11.3	3.4		1807	11.6	3.5
	2150	7.7	2.3		2304	7.8	2.4
11	0230	11.3	3.4	26	0316	9.9	3.0
Th	1009	-3.4	-1.0	F	1051	-1.9	-0.6
	1750	12.0	3.7		1842	11.7	3.6
	2242	8.0	2.4		2343	7.7	2.3
12	0316	11.3	3.4	27	0354	9.7	3.0
F	1052	-3.9	-1.2	Sa	1126	-1.8	-0.5
	1839	12.4	3.8		1916	11.8	3.6
	2335	8.0	2.4				
13	0401	11.2	3.4	28	0022	7.6	2.3
Sa	1140	-4.0	-1.2	Su	0433	9.5	2.9
	1926	12.6	3.8		1200	-1.6	-0.5
					1946	11.8	3.6
14	0032	7.9	2.4	29	0107	7.2	2.2
Su	0457	10.8	3.3	M	0519	9.2	2.8
	1227	-3.6	-1.1		1238	-1.2	-0.4
	2011	12.7	3.9		2017	11.8	3.6
15	0131	7.4	2.3	30	0149	6.8	2.1
M	0556	10.1	3.1	Tu	0607	8.8	2.7
	1319	-2.6	-0.8		1314	-0.5	-0.2
	2057	12.7	3.9		2043	11.8	3.6

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEATTLE, WASHINGTON, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0235	6.1	1.9
W	0701	8.3	2.5
	1353	0.4	0.1
	2114	11.7	3.6
2	0327	5.3	1.6
Th	0806	7.7	2.3
	1434	1.6	0.5
	2140	11.6	3.5
3	0418	4.3	1.3
F	0925	7.3	2.2
	1517	2.9	0.9
	2209	11.4	3.5
4	0505	3.1	0.9
Sa	1053	7.3	2.2
	1605	4.4	1.3
	2239	11.2	3.4
5	0553	1.8	0.5
Su	1226	7.8	2.4
	1704	5.8	1.8
	2311	11.1	3.4
6	0642	0.5	0.2
M	1355	8.7	2.7
	1813	7.0	2.1
	2348	11.0	3.4
7	0728	-0.8	-0.2
Tu	1511	9.8	3.0
	1926	7.8	2.4
8	0029	11.1	3.4
W	0816	-2.0	-0.6
	1607	10.8	3.3
	2035	8.3	2.5
9	0114	11.2	3.4
Th	0903	-3.0	-0.9
	1700	11.6	3.5
	2135	8.4	2.6
10	0205	11.2	3.4
F	0952	-3.7	-1.1
	1741	12.2	3.7
	2232	8.1	2.5
11	0300	11.2	3.4
Sa	1038	-3.9	-1.2
	1823	12.6	3.8
	2327	7.6	2.3
12	0359	11.1	3.4
Su	1126	-3.7	-1.1
	1902	12.7	3.9
13	0020	6.9	2.1
M	0502	10.6	3.2
	1212	-2.9	-0.9
	1937	12.8	3.9
14	0115	5.9	1.8
Tu	0607	10.0	3.0
	1300	-1.7	-0.5
	2014	12.7	3.9
15	0211	4.8	1.5
W	0717	9.2	2.8
	1346	0.0	0.0
	2051	12.5	3.8

Day	Time h m	Height ft	Height m
16	0312	3.7	1.1
Th	0837	8.4	2.6
	1435	1.8	0.5
	2130	12.1	3.7
17	0412	2.5	0.8
F	1010	8.0	2.4
	1530	3.7	1.1
	2206	11.7	3.6
18	0515	1.5	0.5
Sa	1151	8.1	2.5
	1630	5.4	1.6
	2246	11.2	3.4
19	0612	0.6	0.2
Su	1330	8.7	2.7
	1745	6.8	2.1
	2330	10.7	3.3
20	0708	-0.1	0.0
M	1446	9.6	2.9
	1908	7.6	2.3
21	0012	10.3	3.1
Tu	0757	-0.6	-0.2
	1547	10.4	3.2
	2027	7.9	2.4
22	0055	9.9	3.0
W	0840	-1.0	-0.3
	1633	10.9	3.3
	2128	7.9	2.4
23	0137	9.7	3.0
Th	0921	-1.3	-0.4
	1713	11.3	3.4
	2214	7.7	2.3
24	0225	9.7	3.0
F	0959	-1.4	-0.4
	1748	11.5	3.5
	2249	7.5	2.3
25	0307	9.6	2.9
Sa	1032	-1.5	-0.5
	1815	11.6	3.5
	2324	7.1	2.2
26	0349	9.6	2.9
Su	1106	-1.4	-0.4
	1840	11.7	3.6
27	0000	6.7	2.0
M	0433	9.5	2.9
	1139	-1.1	-0.3
	1903	11.7	3.6
28	0035	6.1	1.9
Tu	0517	9.3	2.8
	1213	-0.5	-0.2
	1925	11.7	3.6
29	0110	5.4	1.6
W	0606	9.0	2.7
	1248	0.3	0.1
	1947	11.6	3.5
30	0149	4.5	1.4
Th	0659	8.7	2.7
	1323	1.3	0.4
	2010	11.5	3.5
31	0233	3.6	1.1
F	0800	8.3	2.5
	1359	2.6	0.8
	2035	11.4	3.5

AUGUST

Day	Time h m	Height ft	Height m
1	0319	2.7	0.8
Sa	0912	8.1	2.5
	1441	4.1	1.2
	2103	11.1	3.4
2	0405	1.8	0.5
Su	1034	8.1	2.5
	1530	5.5	1.7
	2136	10.9	3.3
3	0500	0.8	0.2
M	1207	8.5	2.6
	1632	6.9	2.1
	2214	10.8	3.3
4	0557	-0.2	-0.1
Tu	1347	9.3	2.8
	1751	7.9	2.4
	2259	10.7	3.3
5	0656	-1.1	-0.3
W	1502	10.2	3.1
	1915	8.4	2.6
	2355	10.7	3.3
6	0753	-2.0	-0.6
Th	1555	11.1	3.4
	2030	8.3	2.5
7	0058	10.7	3.3
F	0847	-2.7	-0.8
	1637	11.7	3.6
	2131	7.8	2.4
8	0204	10.9	3.3
Sa	0937	-3.1	-0.9
	1712	12.1	3.7
	2222	7.0	2.1
9	0305	10.9	3.3
Su	1025	-3.0	-0.9
	1748	12.4	3.8
	2309	6.0	1.8
10	0411	10.8	3.3
M	1111	-2.4	-0.7
	1820	12.5	3.8
	2358	4.8	1.5
11	0514	10.6	3.2
Tu	1156	-1.3	-0.4
	1851	12.4	3.8
12	0046	3.7	1.1
W	0618	10.1	3.1
	1241	0.2	0.1
	1923	12.2	3.7
13	0138	2.6	0.8
Th	0725	9.6	2.9
	1323	1.8	0.5
	1956	11.9	3.6
14	0227	1.8	0.5
F	0839	9.0	2.7
	1410	3.6	1.1
	2031	11.4	3.5
15	0323	1.2	0.4
Sa	1005	8.7	2.7
	1501	5.2	1.6
	2106	10.8	3.3

Day	Time h m	Height ft	Height m
16	0419	0.8	0.2
Su	1139	8.8	2.7
	1603	6.6	2.0
	2149	10.2	3.1
17	0523	0.6	0.2
M	1311	9.3	2.8
	1733	7.5	2.3
	2237	9.7	3.0
18	0623	0.3	0.1
Tu	1424	9.9	3.0
	1915	7.8	2.4
	2333	9.3	2.8
19	0723	0.1	0.0
W	1521	10.5	3.2
	2030	7.6	2.3
20	0035	9.1	2.8
Th	0814	-0.2	-0.1
	1603	10.9	3.3
	2119	7.3	2.2
21	0131	9.1	2.8
F	0859	-0.5	-0.2
	1638	11.1	3.4
	2155	6.9	2.1
22	0223	9.3	2.8
Sa	0936	-0.6	-0.2
	1707	11.2	3.4
	2227	6.4	2.0
23	0310	9.4	2.9
Su	1009	-0.5	-0.2
	1728	11.3	3.4
	2255	5.7	1.7
24	0354	9.6	2.9
M	1043	-0.3	-0.1
	1747	11.3	3.4
	2324	5.0	1.5
25	0437	9.6	2.9
Tu	1115	0.2	0.1
	1805	11.3	3.4
	2356	4.1	1.2
26	0522	9.6	2.9
W	1147	0.9	0.3
	1822	11.3	3.4
27	0028	3.3	1.0
Th	0608	9.6	2.9
	1219	1.8	0.5
	1842	11.2	3.4
28	0103	2.4	0.7
F	0658	9.4	2.9
	1254	2.9	0.9
	1905	11.1	3.4
29	0142	1.6	0.5
Sa	0757	9.3	2.8
	1333	4.2	1.3
	1932	10.9	3.3
30	0227	0.9	0.3
Su	0903	9.1	2.8
	1416	5.5	1.7
	2000	10.7	3.3
31	0316	0.4	0.1
M	1022	9.1	2.8
	1511	6.7	2.0
	2039	10.5	3.2

SEPTEMBER

Day	Time h m	Height ft	Height m
1	0415	0.0	0.0
Tu	1202	9.4	2.9
	1623	7.7	2.3
	2124	10.2	3.1
2	0520	-0.5	-0.2
W	1328	10.0	3.0
	1755	8.2	2.5
	2230	9.9	3.0
3	0627	-0.9	-0.3
Th	1433	10.7	3.3
	1924	8.0	2.4
	2346	9.9	3.0
4	0733	-1.4	-0.4
F	1519	11.3	3.4
	2030	7.2	2.2
5	0105	10.0	3.0
Sa	0829	-1.6	-0.5
	1558	11.7	3.6
	2123	6.2	1.9
6	0218	10.3	3.1
Su	0921	-1.5	-0.5
	1629	11.9	3.6
	2208	4.9	1.5
7	0326	10.5	3.2
M	1006	-1.0	-0.3
	1659	12.0	3.7
	2250	3.5	1.1
8	0429	10.7	3.3
Tu	1052	-0.1	0.0
	1728	12.0	3.7
	2331	2.3	0.7
9	0527	10.7	3.3
W	1134	1.1	0.3
	1756	11.8	3.6
10	0014	1.2	0.4
Th	0628	10.5	3.2
	1219	2.5	0.8
	1826	11.5	3.5
11	0059	0.6	0.2
F	0728	10.3	3.1
	1303	3.9	1.2
	1854	11.1	3.4
12	0142	0.2	0.1
Sa	0834	10.0	3.0
	1350	5.3	1.6
	1928	10.5	3.2
13	0232	0.3	0.1
Su	0947	9.7	3.0
	1442	6.4	2.0
	2004	9.9	3.0
14	0325	0.5	0.2
M	1113	9.6	2.9
	1556	7.3	2.2
	2049	9.2	2.8
15	0425	0.8	0.2
Tu	1236	9.8	3.0
	1737	7.7	2.3
	2145	8.7	2.7

Day	Time h m	Height ft	Height m
16	0535	0.9	0.3
W	1345	10.2	3.1
	1922	7.4	2.3
	2301	8.3	2.5
17	0641	0.9	0.3
Th	1438	10.6	3.2
	2019	6.9	2.1
18	0023	8.3	2.5
F	0737	0.8	0.2
	1515	10.8	3.3
	2101	6.3	1.9
19	0129	8.5	2.6
Sa	0825	0.7	0.2
	1546	10.9	3.3
	2129	5.6	1.7
20	0225	8.9	2.7
Su	0904	0.8	0.2
	1608	11.0	3.4
	2154	4.7	1.4
21	0313	9.3	2.8
M	0939	1.1	0.3
	1626	11.0	3.4
	2219	3.8	1.2
22	0359	9.6	2.9
Tu	1015	1.6	0.5
	1641	11.0	3.4
	2248	2.8	0.9
23	0442	9.9	3.0
W	1047	2.2	0.7
	1659	11.0	3.4
	2317	1.8	0.5
24	0525	10.2	3.1
Th	1119	3.0	0.9
	1717	11.0	3.4
	2349	0.9	0.3
25	0611	10.4	3.2
F	1157	3.9	1.2
	1739	11.0	3.4
26	0024	0.1	0.0
Sa	0702	10.5	3.2
	1234	4.9	1.5
	1804	10.8	3.3
27	0102	-0.4	-0.1
Su	0755	10.4	3.2
	1318	5.9	1.8
	1833	10.7	3.3
28	0148	-0.7	-0.2
M	0901	10.3	3.1
	1407	6.9	2.1
	1904	10.4	3.2
29	0239	-0.7	-0.2
Tu	1017	10.2	3.1
	1512	7.7	2.3
	1953	10.0	3.0
30	0341	-0.6	-0.2
W	1142	10.4	3.2
	1639	8.0	2.4
	2052	9.4	2.9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SEATTLE, WASHINGTON, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0449	-0.4	-0.1
Th	1252	10.8	3.3
	1817	7.7	2.3
	2225	9.0	2.7
2	0602	-0.2	-0.1
F	1348	11.2	3.4
	1933	6.7	2.0
	2359	8.9	2.7
3	0708	0.0	0.0
Sa	1431	11.5	3.5
	2025	5.3	1.6
4	0127	9.3	2.8
Su	0807	0.3	0.1
	1507	11.8	3.6
	2107	3.8	1.2
5	0242	9.8	3.0
M	0859	0.9	0.3
	1537	11.8	3.6
	2149	2.3	0.7
6	0347	10.4	3.2
Tu	0947	1.8	0.5
	1607	11.8	3.6
	2227	1.0	0.3
7	0445	10.8	3.3
W	1033	2.8	0.9
	1633	11.6	3.5
	2306	-0.1	0.0
8	0539	11.1	3.4
Th	1118	3.9	1.2
	1700	11.4	3.5
	2342	-0.7	-0.2
9	0634	11.2	3.4
F	1200	4.9	1.5
	1729	11.0	3.4
10	0022	-1.0	-0.3
Sa	0727	11.1	3.4
	1243	5.9	1.8
	1757	10.5	3.2
11	0101	-0.8	-0.2
Su	0826	10.9	3.3
	1335	6.7	2.0
	1832	9.9	3.0
12	0147	-0.4	-0.1
M	0930	10.7	3.3
	1435	7.3	2.2
	1904	9.2	2.8
13	0236	0.2	0.1
Tu	1037	10.5	3.2
	1549	7.7	2.3
	1951	8.6	2.6
14	0333	0.8	0.2
W	1150	10.5	3.2
	1742	7.5	2.3
	2057	8.0	2.4
15	0439	1.3	0.4
Th	1248	10.7	3.3
	1908	6.9	2.1
	2235	7.6	2.3
16	0545	1.7	0.5
F	1336	10.8	3.3
	1950	6.1	1.9
17	0005	7.7	2.3
Sa	0647	2.0	0.6
	1412	10.9	3.3
	2022	5.2	1.6
18	0124	8.1	2.5
Su	0737	2.3	0.7
	1437	10.9	3.3
	2054	4.1	1.2
19	0223	8.6	2.6
M	0825	2.7	0.8
	1458	10.9	3.3
	2119	3.0	0.9
20	0316	9.3	2.8
Tu	0902	3.2	1.0
	1515	10.9	3.3
	2144	1.9	0.6
21	0402	9.9	3.0
W	0942	3.9	1.2
	1532	10.9	3.3
	2209	0.7	0.2
22	0445	10.5	3.2
Th	1017	4.6	1.4
	1552	11.0	3.4
	2241	-0.3	-0.1
23	0527	11.0	3.4
F	1057	5.3	1.6
	1616	11.0	3.4
	2314	-1.2	-0.4
24	0615	11.3	3.4
Sa	1138	6.1	1.9
	1644	11.0	3.4
	2351	-1.8	-0.5
25	0705	11.5	3.5
Su	1220	6.8	2.1
	1711	10.9	3.3
26	0034	-2.0	-0.6
M	0757	11.6	3.5
	1312	7.4	2.3
	1750	10.6	3.2
27	0121	-1.9	-0.6
Tu	0903	11.5	3.5
	1408	7.9	2.4
	1835	10.2	3.1
28	0213	-1.5	-0.5
W	1011	11.5	3.5
	1523	8.0	2.4
	1924	9.5	2.9
29	0313	-0.8	-0.2
Th	1114	11.5	3.5
	1656	7.5	2.3
	2051	8.7	2.7
30	0420	0.1	0.0
F	1211	11.7	3.6
	1821	6.4	2.0
	2240	8.2	2.5
31	0529	1.0	0.3
Sa	1258	11.8	3.6
	1921	4.9	1.5

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0023	8.3	2.5
Su	0639	1.9	0.6
	1337	11.9	3.6
	2009	3.2	1.0
2	0153	9.0	2.7
M	0741	2.8	0.9
	1411	11.9	3.6
	2048	1.6	0.5
3	0307	9.8	3.0
Tu	0836	3.8	1.2
	1441	11.8	3.6
	2127	0.2	0.1
4	0408	10.6	3.2
W	0929	4.7	1.4
	1510	11.6	3.5
	2204	-0.9	-0.3
5	0502	11.3	3.4
Th	1017	5.5	1.7
	1539	11.4	3.5
	2240	-1.5	-0.5
6	0551	11.7	3.6
F	1104	6.2	1.9
	1611	11.0	3.4
	2315	-1.8	-0.5
7	0636	11.9	3.6
Sa	1148	6.8	2.1
	1639	10.6	3.2
	2351	-1.7	-0.5
8	0725	11.9	3.6
Su	1236	7.3	2.2
	1711	10.1	3.1
9	0030	-1.4	-0.4
M	0814	11.8	3.6
	1325	7.6	2.3
	1743	9.6	2.9
10	0113	-0.8	-0.2
Tu	0906	11.6	3.5
	1424	7.8	2.4
	1818	9.1	2.8
11	0157	-0.1	0.0
W	0958	11.4	3.5
	1536	7.7	2.3
	1909	8.4	2.6
12	0245	0.6	0.2
Th	1052	11.3	3.4
	1703	7.2	2.2
	2023	7.8	2.4
13	0343	1.5	0.5
F	1141	11.3	3.4
	1815	6.4	2.0
	2157	7.3	2.2
14	0442	2.3	0.7
Sa	1218	11.2	3.4
	1900	5.3	1.6
	2339	7.3	2.2
15	0541	3.2	1.0
Su	1250	11.2	3.4
	1936	4.2	1.3
16	0107	7.8	2.4
M	0640	4.0	1.2
	1316	11.1	3.4
	2008	2.9	0.9
17	0216	8.5	2.6
Tu	0733	4.8	1.5
	1340	11.1	3.4
	2036	1.6	0.5
18	0315	9.4	2.9
W	0824	5.5	1.7
	1403	11.1	3.4
	2105	0.3	0.1
19	0403	10.3	3.1
Th	0906	6.2	1.9
	1428	11.1	3.4
	2139	-0.9	-0.3
20	0450	11.1	3.4
F	0952	6.8	2.1
	1456	11.2	3.4
	2211	-1.9	-0.6
21	0535	11.8	3.6
Sa	1038	7.3	2.2
	1525	11.3	3.4
	2249	-2.6	-0.8
22	0617	12.2	3.7
Su	1124	7.8	2.4
	1600	11.3	3.4
	2330	-3.0	-0.9
23	0706	12.5	3.8
M	1213	8.1	2.5
	1642	11.2	3.4
24	0014	-3.0	-0.9
Tu	0755	12.6	3.8
	1308	8.2	2.5
	1726	10.7	3.3
25	0105	-2.5	-0.8
W	0850	12.6	3.8
	1411	8.0	2.4
	1823	10.0	3.0
26	0155	-1.6	-0.5
Th	0943	12.5	3.8
	1526	7.4	2.3
	1936	9.1	2.8
27	0251	-0.4	-0.1
F	1033	12.5	3.8
	1644	6.3	1.9
	2109	8.2	2.5
28	0351	1.1	0.3
Sa	1120	12.4	3.8
	1800	4.8	1.5
	2259	7.9	2.4
29	0457	2.6	0.8
Su	1201	12.3	3.7
	1855	3.1	0.9
30	0050	8.3	2.5
M	0606	4.1	1.2
	1240	12.1	3.7
	1943	1.4	0.4

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0217	9.2	2.8
Tu	0715	5.4	1.6
	1317	11.9	3.6
	2025	0.1	0.0
2	0329	10.2	3.1
W	0818	6.3	1.9
	1351	11.6	3.5
	2107	-1.0	-0.3
3	0425	11.1	3.4
Th	0918	7.0	2.1
	1423	11.3	3.4
	2143	-1.6	-0.5
4	0513	11.8	3.6
F	1009	7.5	2.3
	1456	11.0	3.4
	2219	-1.9	-0.6
5	0558	12.2	3.7
Sa	1057	7.8	2.4
	1529	10.7	3.3
	2254	-2.0	-0.6
6	0638	12.4	3.8
Su	1143	7.9	2.4
	1600	10.4	3.2
	2330	-1.8	-0.5
7	0720	12.4	3.8
M	1228	8.0	2.4
	1639	10.1	3.1
8	0006	-1.5	-0.5
Tu	0755	12.3	3.7
	1313	7.9	2.4
	1718	9.7	3.0
9	0045	-1.0	-0.3
W	0834	12.2	3.7
	1405	7.7	2.3
	1803	9.2	2.8
10	0126	-0.3	-0.1
Th	0912	12.1	3.7
	1501	7.3	2.2
	1855	8.5	2.6
11	0208	0.6	0.2
F	0949	12.0	3.7
	1603	6.7	2.0
	2004	7.9	2.4
12	0251	1.7	0.5
Sa	1025	11.8	3.6
	1659	5.7	1.7
	2127	7.4	2.3
13	0339	2.9	0.9
Su	1057	11.6	3.5
	1751	4.6	1.4
	2304	7.3	2.2
14	0436	4.2	1.3
M	1127	11.4	3.5
	1835	3.3	1.0
15	0042	7.8	2.4
Tu	0530	5.5	1.7
	1156	11.3	3.4
	1914	2.0	0.6
16	0208	8.7	2.7
W	0636	6.6	2.0
	1225	11.2	3.4
	1953	0.6	0.2
17	0314	9.7	3.0
Th	0742	7.4	2.3
	1257	11.2	3.4
	2029	-0.6	-0.2
18	0406	10.8	3.3
F	0841	8.0	2.4
	1332	11.3	3.4
	2108	-1.7	-0.5
19	0451	11.7	3.6
Sa	0936	8.4	2.6
	1411	11.4	3.5
	2150	-2.7	-0.8
20	0533	12.3	3.7
Su	1024	8.6	2.6
	1453	11.6	3.5
	2231	-3.3	-1.0
21	0619	12.8	3.9
M	1115	8.5	2.6
	1541	11.5	3.5
	2316	-3.5	-1.1
22	0701	13.1	4.0
Tu	1204	8.3	2.5
	1630	11.3	3.4
23	0001	-3.2	-1.0
W	0739	13.2	4.0
	1301	7.7	2.3
	1729	10.8	3.3
24	0049	-2.4	-0.7
Th	0821	13.2	4.0
	1400	6.9	2.1
	1835	10.0	3.0
25	0138	-1.1	-0.3
F	0902	13.1	4.0
	1506	5.9	1.8
	1952	9.0	2.7
26	0227	0.6	0.2
Sa	0944	12.9	3.9
	1615	4.6	1.4
	2124	8.3	2.5
27	0322	2.5	0.8
Su	1023	12.6	3.8
	1717	3.1	0.9
	2312	8.1	2.5
28	0421	4.4	1.3
M	1104	12.3	3.7
	1819	1.7	0.5
29	0102	8.6	2.6
Tu	0530	6.1	1.9
	1143	11.9	3.6
	1912	0.5	0.2
30	0232	9.7	3.0
W	0654	7.3	2.2
	1225	11.5	3.5
	2000	-0.5	-0.2
31	0337	10.7	3.3
Th	0809	8.0	2.4
	1307	11.1	3.4
	2044	-1.1	-0.3

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VICTORIA, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0445	8.3	2.5	16	0500	8.0	2.4
Th	0915	9.3	2.8	F	0945	8.7	2.7
	1310	10.5	3.2		1240	9.2	2.8
	2210	-0.2	-0.1		2215	1.7	0.5
2	0815	9.2	2.8	17	0805	8.7	2.7
F	1000	9.0	2.7	Sa	1020	8.4	2.6
	1400	9.9	3.0		1320	8.8	2.7
	2300	0.5	0.2		2245	2.0	0.6
3	0840	9.1	2.8	18	0800	8.6	2.6
Sa	1125	8.4	2.6	Su	1115	8.0	2.4
	1445	9.0	2.7		1400	8.3	2.5
	2345	1.5	0.5		2315	2.6	0.8
4	0845	9.0	2.7	19	0745	8.6	2.6
Su	1255	7.7	2.3	M	1220	7.4	2.3
	1525	7.9	2.4		1440	7.6	2.3
					2350	3.3	1.0
5	0020	2.6	0.8	20	0725	8.7	2.7
M	0830	9.0	2.7	Tu	1325	6.6	2.0
	1525	6.7	2.0		1600	6.8	2.1
	1745	6.8	2.1				
6	0055	3.9	1.2	21	0010	4.2	1.3
Tu	0845	9.1	2.8	W	0745	8.8	2.7
	1635	5.6	1.7		1425	5.7	1.7
	1950	5.9	1.8		1900	6.1	1.9
7	0130	5.2	1.6	22	0040	5.2	1.6
W	0905	9.2	2.8	Th	0755	9.0	2.7
	1715	4.5	1.4		1530	4.6	1.4
					2115	5.8	1.8
8	0115	6.3	1.9	23	0215	6.4	2.0
Th	0330	6.6	2.0	F	0810	9.3	2.8
	0925	9.3	2.8		1625	3.5	1.1
	1745	3.6	1.1				
9	0330	7.5	2.3	24	0145	7.1	2.2
F	0635	8.5	2.6	Sa	0245	7.3	2.2
	0945	9.3	2.8		0830	9.7	3.0
	1815	2.9	0.9		1720	2.4	0.7
10	0400	8.2	2.5	25	0200	7.6	2.3
Sa	0650	8.8	2.7	Su	0315	8.0	2.4
	0940	9.3	2.8		0845	10.0	3.0
	1850	2.3	0.7		1810	1.4	0.4
11	0430	8.7	2.7	26	0215	7.9	2.4
Su	0545	8.9	2.7	M	0500	8.8	2.7
	0920	9.4	2.9		0925	10.3	3.1
	1925	1.9	0.6		1855	0.6	0.2
12	0430	8.7	2.7	27	0245	8.0	2.4
M	0645	9.2	2.8	Tu	0645	9.3	2.8
	0945	9.5	2.9		1015	10.5	3.2
	2000	1.7	0.5		1945	0.2	0.1
13	0415	8.3	2.5	28	0300	7.9	2.4
Tu	0745	9.2	2.8	W	0745	9.2	2.8
	1020	9.5	2.9		1120	10.5	3.2
	2035	1.5	0.5		2030	0.0	0.0
14	0430	8.2	2.5	29	0630	8.8	2.7
W	0815	9.2	2.8	Th	0745	8.7	2.7
	1105	9.5	2.9		1230	10.2	3.1
	2110	1.4	0.4		2110	0.2	0.1
15	0445	8.1	2.5	30	0700	8.6	2.6
Th	0915	9.0	2.7	F	0855	8.3	2.5
	1155	9.4	2.9		1345	9.8	3.0
	2145	1.5	0.5		2155	0.7	0.2
				31	0700	8.5	2.6
				Sa	1000	7.7	2.3
					1450	9.1	2.8
					2235	1.6	0.5

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0620	8.5	2.6	16	0520	8.2	2.5
Su	1105	6.9	2.1	M	1055	6.3	1.9
	1600	8.2	2.5		1545	7.6	2.3
	2310	2.7	0.8		2250	3.7	1.1
2	0615	8.7	2.7	17	0545	8.4	2.6
M	1210	6.1	1.9	Tu	1145	5.5	1.7
	1700	7.2	2.2		1700	7.0	2.1
	2350	4.0	1.2		2310	4.6	1.4
3	0650	8.9	2.7	18	0555	8.6	2.6
Tu	1320	5.3	1.6	W	1230	4.8	1.5
	1825	6.4	2.0		1805	6.5	2.0
					2345	5.5	1.7
4	0005	5.2	1.6	19	0610	8.8	2.7
W	0710	9.0	2.7	Th	1325	4.0	1.2
	1445	4.6	1.4		1945	6.2	1.9
	2030	6.0	1.8				
5	0145	6.5	2.0	20	0045	6.5	2.0
Th	0730	9.0	2.7	F	0630	9.0	2.7
	1555	3.9	1.2		1425	3.2	1.0
	2110	5.8	1.8		2300	6.8	2.1
6	0230	7.4	2.3	21	0115	7.3	2.2
F	0745	9.0	2.7	Sa	0645	9.3	2.8
	1645	3.3	1.0		1535	2.6	0.8
7	0315	8.2	2.5	22	0115	7.8	2.4
Sa	0530	8.7	2.7	Su	0405	8.7	2.7
	0745	9.0	2.7		0700	9.5	2.9
	1735	2.8	0.9		1645	1.9	0.6
8	0330	8.5	2.6	23	0130	8.0	2.4
Su	0430	8.8	2.7	M	0230	8.3	2.5
	0745	9.0	2.7		0745	9.7	3.0
	1815	2.5	0.8		1745	1.4	0.4
9	0805	9.0	2.7	24	0145	7.9	2.4
M	1900	2.2	0.7	Tu	0530	8.9	2.7
					0850	9.6	2.9
					1835	1.0	0.3
10	0330	8.3	2.5	25	0200	7.8	2.4
Tu	0545	8.9	2.7	W	0615	8.5	2.6
	0900	9.0	2.7		1010	9.5	2.9
	1940	2.1	0.6		1920	0.9	0.3
11	0330	7.9	2.4	26	0500	8.3	2.5
W	0700	8.7	2.7	Th	0700	8.0	2.4
	1010	9.0	2.7		1150	9.3	2.8
	2010	2.0	0.6		2015	1.1	0.3
12	0345	7.8	2.4	27	0455	8.0	2.4
Th	0800	8.4	2.6	F	0800	7.3	2.2
	1125	8.9	2.7		1305	9.0	2.7
	2050	2.0	0.6		2050	1.6	0.5
13	0625	8.2	2.5	28	0415	8.0	2.4
F	0830	8.0	2.4	Sa	0900	6.5	2.0
	1240	8.7	2.7		1415	8.5	2.6
	2115	2.1	0.6		2125	2.4	0.7
14	0610	8.0	2.4				
Sa	0915	7.5	2.3				
	1345	8.5	2.6				
	2150	2.4	0.7				
15	0525	8.1	2.5				
Su	1005	6.9	2.1				
	1445	8.1	2.5				
	2215	3.0	0.9				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0410	8.2	2.5	16	0340	8.0	2.4
Su	0955	5.7	1.7	M	0945	4.8	1.5
	1520	8.0	2.4		1520	7.3	2.2
	2200	3.4	1.0		2140	4.5	1.4
2	0445	8.4	2.6	17	0400	8.2	2.5
M	1045	4.9	1.5	Tu	1025	4.0	1.2
	1630	7.3	2.2		1620	7.1	2.2
	2240	4.5	1.4		2205	5.3	1.6
3	0500	8.6	2.6	18	0415	8.5	2.6
Tu	1145	4.2	1.3	W	1105	3.2	1.0
	1730	6.8	2.1		1725	6.8	2.1
	2305	5.6	1.7		2245	6.1	1.9
4	0525	8.7	2.7	19	0440	8.7	2.7
W	1230	3.7	1.1	Th	1155	2.6	0.8
	2140	6.6	2.0		1830	6.7	2.0
	2320	6.5	2.0		2315	7.0	2.1
5	0545	8.7	2.7	20	0445	8.9	2.7
Th	1320	3.4	1.0	F	1250	2.2	0.7
	2200	7.0	2.1		2015	6.8	2.1
6	0015	7.3	2.2	21	0030	7.7	2.3
F	0600	8.6	2.6	Sa	0435	9.1	2.8
	1425	3.2	1.0		1350	1.9	0.6
					2245	7.7	2.3
7	0045	7.8	2.4	22	0045	8.1	2.5
Sa	0315	8.3	2.5	Su	0500	9.1	2.8
	0545	8.6	2.6		1500	1.8	0.5
	1540	3.0	0.9		2355	8.0	2.4
8	0415	8.6	2.6	23	0115	8.3	2.5
Su	1645	2.9	0.9	M	0545	9.0	2.7
					1610	1.7	0.5
9	0405	8.6	2.6	24	0045	8.1	2.5
M	1740	2.8	0.9	Tu	0415	8.5	2.6
					0650	8.7	2.7
					1710	1.7	0.5
10	0420	8.5	2.6	25	0300	8.3	2.5
Tu	0715	8.3	2.5	W	0535	8.0	2.4
	1030	7.7	2.3		0830	8.3	2.5
	1825	2.7	0.8		1815	1.8	0.5
11	0430	8.2	2.5	26	0300	8.0	2.4
W	0730	8.0	2.4	Th	0625	7.2	2.2
	1145	7.7	2.3		1055	8.0	2.4
	1900	2.6	0.8		1855	2.1	0.6
12	0445	7.9	2.4	27	0225	7.8	2.4
Th	0720	7.6	2.3	F	0715	6.3	1.9
	1025	7.9	2.4		1240	7.8	2.4
	1940	2.7	0.8		1940	2.7	0.8
13	0425	7.7	2.3	28	0215	7.9	2.4
F	0800	7.1	2.2	Sa	0805	5.3	1.6
	1230	7.8	2.4		1345	7.6	2.3
	2010	2.8	0.9		2015	3.5	1.1
14	0325	7.6	2.3	29	0240	8.1	2.5
Sa	0820	6.4	2.0	Su	0855	4.4	1.3
	1330	7.7	2.3		1445	7.3	2.2
	2040	3.2	1.0		2055	4.4	1.3
15	0330	7.8	2.4	30	0300	8.3	2.5
Su	0900	5.7	1.7	M	0935	3.5	1.1
	1425	7.6	2.3		1555	7.1	2.2
	2105	3.7	1.1		2130	5.3	1.6
				31	0325	8.4	2.6
				Tu	1020	2.9	0.9
					1715	7.0	2.1
					2200	6.3	1.9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VICTORIA, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0350	8.5	2.6	16	0250	8.9	2.7
W	1100	2.4	0.7	Th	1045	1.1	0.3
	2030	7.2	2.2		1730	7.0	2.1
	2240	7.1	2.2		2215	7.6	2.3
2	0355	8.5	2.6	17	0245	9.1	2.8
Th	1150	2.2	0.7	F	1130	0.8	0.2
	1915	7.0	2.1		1845	7.1	2.2
	2330	7.7	2.3		2345	8.2	2.5
3	0345	8.4	2.6	18	0255	9.2	2.8
F	1230	2.2	0.7	Sa	1220	0.8	0.2
	2115	7.6	2.3		2030	7.6	2.3
	2345	8.1	2.5				
4	0245	8.4	2.6	19	0015	8.5	2.6
Sa	1320	2.4	0.7	Su	0315	9.1	2.8
					1320	1.0	0.3
					2215	8.1	2.5
5	0210	8.5	2.6	20	0100	8.5	2.6
Su	1425	2.7	0.8	M	0350	8.8	2.7
					1425	1.4	0.4
6	0215	8.4	2.6	21	0045	8.4	2.6
M	1540	2.9	0.9	Tu	0330	8.2	2.5
					0730	7.8	2.4
					1535	1.8	0.5
7	0230	8.3	2.5	22	0100	8.3	2.5
Tu	0435	8.0	2.4	W	0445	7.5	2.3
	0645	7.6	2.3		0900	7.1	2.2
	1645	3.0	0.9		1635	2.4	0.7
8	0245	8.0	2.4	23	0105	8.0	2.4
W	0615	7.4	2.3	Th	0610	6.5	2.0
	0930	6.9	2.1		1000	6.7	2.0
	1730	3.1	0.9		1730	3.0	0.9
9	0220	7.8	2.4	24	0045	7.9	2.4
Th	0700	6.9	2.1	F	0645	5.4	1.6
	1100	6.7	2.0		1145	6.6	2.0
	1810	3.3	1.0		1815	3.7	1.1
10	0150	7.6	2.3	25	0100	8.0	2.4
F	0715	6.3	1.9	Sa	0715	4.4	1.3
	1140	6.7	2.0		1310	6.5	2.0
	1850	3.6	1.1		1900	4.6	1.4
11	0145	7.6	2.3	26	0110	8.2	2.5
Sa	0730	5.5	1.7	Su	0800	3.3	1.0
	1250	6.8	2.1		1425	6.6	2.0
	1920	4.1	1.2		1945	5.5	1.7
12	0150	7.8	2.4	27	0135	8.3	2.5
Su	0805	4.5	1.4	M	0835	2.5	0.8
	1350	6.8	2.1		1710	6.9	2.1
	1955	4.7	1.4		2015	6.3	1.9
13	0205	8.0	2.4	28	0150	8.5	2.6
M	0840	3.5	1.1	Tu	0915	1.8	0.5
	1455	6.9	2.1		1845	7.4	2.3
	2025	5.4	1.6		2100	7.1	2.2
14	0225	8.3	2.5	29	0205	8.5	2.6
Tu	0915	2.5	0.8	W	0955	1.4	0.4
	1610	7.0	2.1		2000	7.8	2.4
	2050	6.2	1.9		2125	7.7	2.3
15	0245	8.6	2.6	30	0200	8.5	2.6
W	1000	1.7	0.5	Th	1035	1.2	0.4
	1905	7.2	2.2		1800	7.3	2.2
	2130	6.9	2.1		2215	8.1	2.5

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0130	8.5	2.6	16	0145	9.5	2.9
F	1110	1.3	0.4	Sa	1110	-0.3	-0.1
	1915	7.6	2.3		1900	7.7	2.3
	2130	8.3	2.5		2330	8.7	2.7
2	0115	8.5	2.6	17	0215	9.3	2.8
Sa	1155	1.5	0.5	Su	1200	0.1	0.0
					2225	8.6	2.6
					2355	8.5	2.6
3	0100	8.5	2.6	18	0300	8.9	2.7
Su	1240	1.9	0.6	M	1255	0.7	0.2
					2305	8.5	2.6
4	0030	8.4	2.6	19	0145	8.1	2.5
M	1330	2.3	0.7	Tu	0615	7.7	2.3
					1355	1.5	0.5
					2330	8.4	2.6
5	0025	8.3	2.5	20	0245	7.4	2.3
Tu	1425	2.7	0.8	W	0730	6.8	2.1
					1450	2.4	0.7
					2330	8.2	2.5
6	0015	8.1	2.5	21	0445	6.1	1.9
W	0335	7.6	2.3	Th	0900	6.1	1.9
	0700	6.7	2.0		1550	3.4	1.0
	1530	3.1	0.9		2320	8.2	2.5
7	0015	7.9	2.4	22	0610	4.9	1.5
Th	0545	6.5	2.0	F	1050	5.7	1.7
	0830	6.2	1.9		1645	4.4	1.3
	1610	3.6	1.1		2330	8.3	2.5
8	0015	7.8	2.4	23	0630	3.8	1.2
F	0715	5.8	1.8	Sa	1425	5.9	1.8
	0945	5.8	1.8		1730	5.4	1.6
	1655	4.1	1.2		2350	8.4	2.6
9	0015	7.8	2.4	24	0705	2.8	0.9
Sa	0655	4.9	1.5	Su	1555	6.6	2.0
	1155	5.9	1.8		1810	6.3	1.9
	1745	4.8	1.5				
10	0020	8.0	2.4	25	0010	8.5	2.6
Su	0710	3.8	1.2	M	0745	2.0	0.6
	1315	6.1	1.9		1710	7.2	2.2
	1810	5.5	1.7		1850	7.1	2.2
11	0030	8.2	2.5	26	0040	8.6	2.6
M	0740	2.7	0.8	Tu	0815	1.4	0.4
	1530	6.5	2.0		1815	7.8	2.4
	1900	6.2	1.9		1945	7.7	2.3
12	0045	8.5	2.6	27	0040	8.6	2.6
Tu	0815	1.6	0.5	W	0855	1.0	0.3
	1740	7.1	2.2		1630	7.3	2.2
	1940	6.9	2.1		2045	8.1	2.5
13	0055	8.9	2.7	28	0010	8.7	2.7
W	0855	0.7	0.2	Th	0935	0.8	0.2
	1545	7.0	2.1		1700	7.4	2.3
	2030	7.6	2.3		2130	8.4	2.6
14	0105	9.2	2.8	29	0010	8.8	2.7
Th	0940	0.0	0.0	F	1010	0.8	0.2
	1645	7.3	2.2		1800	7.6	2.3
	2115	8.1	2.5		2145	8.5	2.6
15	0120	9.5	2.9	30	0035	8.7	2.7
F	1025	-0.3	-0.1	Sa	1045	1.0	0.3
	1745	7.4	2.3		1845	7.7	2.3
	2230	8.5	2.6		2215	8.5	2.6
				31	0045	8.6	2.6
				Su	1130	1.3	0.4
					2225	8.4	2.6

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1205	1.6	0.5	16	0015	7.9	2.4
M	2225	8.3	2.5	Tu	0305	8.3	2.5
					1230	1.1	0.3
					2145	8.3	2.5
2	0315	7.8	2.4	17	0210	7.1	2.2
Tu	0800	5.8	1.8	W	0340	7.2	2.2
	1250	2.1	0.6		1315	2.2	0.7
	2245	8.2	2.5		2140	8.3	2.5
3	0335	7.3	2.2	18	0445	6.0	1.8
W	0830	5.6	1.7	Th	0700	6.1	1.9
	1325	2.7	0.8		1400	3.4	1.0
	2245	8.1	2.5		2145	8.4	2.6
4	0430	6.6	2.0	19	0510	4.8	1.5
Th	0615	6.2	1.9	F	0920	5.4	1.6
	1400	3.4	1.0		1450	4.6	1.4
	2240	8.0	2.4		2205	8.5	2.6
5	0415	5.9	1.8	20	0530	3.7	1.1
F	0800	5.6	1.7	Sa	1405	5.9	1.8
	1440	4.1	1.2		1545	5.8	1.8
	2235	8.0	2.4		2225	8.6	2.6
6	0610	4.8	1.5	21	0615	2.7	0.8
Sa	1025	5.3	1.6	Su	1445	6.7	2.0
	1455	5.0	1.5		1730	6.9	2.1
	2245	8.2	2.5		2245	8.6	2.6
7	0615	3.7	1.1	22	0645	2.0	0.6
Su	1200	5.6	1.7	M	1530	7.3	2.2
	1715	6.0	1.8		1815	7.6	2.3
	2300	8.4	2.6		2250	8.7	2.7
8	0640	2.5	0.8	23	0720	1.4	0.4
M	1330	6.2	1.9	Tu	1600	7.6	2.3
	1800	6.8	2.1		1900	8.1	2.5
	2300	8.8	2.7		2230	8.7	2.7
9	0715	1.4	0.4	24	0800	1.1	0.3
Tu	1415	6.7	2.0	W	1600	7.5	2.3
	1845	7.5	2.3		2000	8.4	2.6
	2315	9.2	2.8		2245	8.8	2.7
10	0755	0.4	0.1	25	0840	0.9	0.3
W	1500	7.1	2.2	Th	1630	7.5	2.3
	1945	8.2	2.5		2030	8.5	2.6
	2330	9.6	2.9		2310	8.8	2.7
11	0840	-0.4	-0.1	26	0915	0.8	0.2
Th	1545	7.3	2.2	F	1645	7.4	2.3
	2030	8.5	2.6		2115	8.5	2.6
					2355	8.8	2.7
12	0010	9.9	3.0	27	0955	0.9	0.3
F	0920	-0.8	-0.2	Sa	1730	7.5	2.3
	1630	7.4	2.3		2145	8.4	2.6
	2115	8.7	2.7				
13	0045	9.9	3.0	28	0025	8.6	2.6
Sa	1005	-0.8	-0.2	Su	1030	1.1	0.3
	1730	7.6	2.3		1800	7.5	2.3
	2230	8.7	2.7		2200	8.2	2.5
14	0130	9.6	2.9	29	0100	8.4	2.6
Su	1055	-0.5	-0.2	M	1105	1.4	0.4
	2115	8.5	2.6		2105	8.1	2.5
	2250	8.4	2.6		2345	7.9	2.4
15	0220	9.1	2.8	30	0130	8.0	2.4
M	1145	0.1	0.0	Tu	1140	1.8	0.5
	2130	8.4	2.6		2105	8.1	2.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VICTORIA, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0030	7.5	2.3	16	0115	5.9	1.8
W	0445	7.1	2.2	Th	0600	6.5	2.0
	1210	2.4	0.7		1240	3.4	1.0
	2105	8.0	2.4		2000	8.4	2.6
2	0100	7.0	2.1	17	0300	4.9	1.5
Th	0530	6.5	2.0	F	0730	5.6	1.7
	1240	3.1	0.9		1310	4.7	1.4
	2100	8.0	2.4		2015	8.5	2.6
3	0200	6.2	1.9	18	0410	3.8	1.2
F	0630	5.8	1.8	Sa	1100	5.7	1.7
	1300	4.0	1.2		1500	6.1	1.9
	2100	8.1	2.5		2050	8.6	2.6
4	0445	5.0	1.5	19	0500	3.0	0.9
Sa	0815	5.3	1.6	Su	1400	6.8	2.1
	1305	4.9	1.5		1545	7.0	2.1
	2100	8.3	2.5		2105	8.6	2.6
5	0500	3.9	1.2	20	0545	2.3	0.7
Su	1045	5.4	1.6	M	1500	7.5	2.3
	1515	6.0	1.8		1645	7.8	2.4
	2110	8.5	2.6		2115	8.6	2.6
6	0530	2.8	0.9	21	0625	1.9	0.6
M	1245	6.1	1.9	Tu	1545	7.9	2.4
	1600	6.9	2.1		1745	8.2	2.5
	2125	8.9	2.7		2105	8.6	2.6
7	0610	1.7	0.5	22	0700	1.5	0.5
Tu	1345	6.7	2.0	W	1545	7.9	2.4
	1700	7.7	2.3		1830	8.4	2.6
	2140	9.3	2.8		2125	8.7	2.7
8	0655	0.7	0.2	23	0745	1.3	0.4
W	1430	7.2	2.2	Th	1545	7.6	2.3
	1800	8.2	2.5		1930	8.4	2.6
	2215	9.7	3.0		2210	8.7	2.7
9	0735	-0.1	0.0	24	0820	1.2	0.4
Th	1500	7.3	2.2	F	1600	7.4	2.3
	1900	8.5	2.6		2000	8.3	2.5
	2300	10.0	3.0		2310	8.7	2.7
10	0820	-0.6	-0.2	25	0855	1.2	0.4
F	1530	7.3	2.2	Sa	1615	7.2	2.2
	2015	8.6	2.6		2045	8.1	2.5
	2355	10.0	3.0				
11	0915	-0.8	-0.2	26	0005	8.6	2.6
Sa	1615	7.4	2.3	Su	0930	1.3	0.4
	2045	8.4	2.6		1945	7.9	2.4
					2105	7.8	2.4
12	0055	9.8	3.0	27	0100	8.3	2.5
Su	0955	-0.6	-0.2	M	1005	1.5	0.5
	2000	8.2	2.5		1940	7.7	2.3
	2145	8.0	2.4		2205	7.4	2.3
13	0200	9.3	2.8	28	0145	8.0	2.4
M	1035	0.0	0.0	Tu	1035	1.9	0.6
	1955	8.1	2.5		1915	7.7	2.3
	2300	7.5	2.3		2300	7.0	2.1
14	0305	8.5	2.6	29	0245	7.5	2.3
Tu	1115	0.9	0.3	W	1100	2.5	0.8
	1945	8.1	2.5		1845	7.8	2.4
15	0005	6.7	2.0	30	0000	6.4	2.0
W	0430	7.5	2.3	Th	0345	6.9	2.1
	1200	2.1	0.6		1130	3.2	1.0
	1930	8.2	2.5		1900	7.9	2.4
				31	0055	5.7	1.7
				F	0510	6.2	1.9
					1150	4.1	1.2
					1905	8.1	2.5

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0155	4.9	1.5	16	0305	3.1	0.9
Sa	0700	5.7	1.7	Su	1215	6.8	2.1
	1200	5.0	1.5		1345	7.1	2.2
	1915	8.2	2.5		1915	8.5	2.6
2	0255	4.1	1.2	17	0410	2.7	0.8
Su	0845	5.5	1.7	M	1345	7.6	2.3
	1345	6.1	1.9		1635	8.1	2.5
	1940	8.5	2.6		1930	8.4	2.6
3	0355	3.1	0.9	18	0505	2.4	0.7
M	1230	6.5	2.0	Tu	1430	8.0	2.4
	1400	6.8	2.1		1645	8.2	2.5
	1945	8.8	2.7		1930	8.4	2.6
4	0450	2.2	0.7	19	0555	2.2	0.7
Tu	1330	7.1	2.2	W	1500	8.0	2.4
	1645	8.2	2.5		1630	8.3	2.5
	2005	9.2	2.8		1950	8.4	2.6
5	0540	1.4	0.4	20	0640	2.0	0.6
W	1400	7.4	2.3	Th	1715	8.2	2.5
	1725	8.4	2.6		1845	8.2	2.5
	2050	9.5	2.9		2055	8.3	2.5
6	0630	0.6	0.2	21	0720	1.9	0.6
Th	1400	7.3	2.2	F	1730	8.0	2.4
	1745	8.4	2.6		1905	7.9	2.4
	2145	9.7	3.0		2215	8.2	2.5
7	0715	0.1	0.0	22	0800	1.9	0.6
F	1430	7.3	2.2	Sa	1800	7.7	2.3
	1915	8.4	2.6		1945	7.6	2.3
	2255	9.7	3.0		2345	8.2	2.5
8	0805	-0.1	0.0	23	0830	2.0	0.6
Sa	1500	7.3	2.2	Su	1750	7.5	2.3
	1945	8.0	2.4		2015	7.2	2.2
9	0015	9.6	2.9	24	0055	8.0	2.4
Su	0850	0.0	0.0	M	0900	2.2	0.7
	1810	7.8	2.4		1715	7.4	2.3
	2040	7.4	2.3		2100	6.7	2.0
10	0140	9.2	2.8	25	0150	7.8	2.4
M	0930	0.5	0.2	Tu	0930	2.6	0.8
	1725	7.7	2.3		1630	7.5	2.3
	2140	6.7	2.0		2150	6.1	1.9
11	0245	8.6	2.6	26	0250	7.5	2.3
Tu	1005	1.4	0.4	W	1000	3.1	0.9
	1715	7.9	2.4		1655	7.7	2.3
	2235	5.9	1.8		2230	5.5	1.7
12	0345	7.8	2.4	27	0345	7.1	2.2
W	1045	2.5	0.8	Th	1025	3.9	1.2
	1745	8.1	2.5		1700	7.9	2.4
	2345	5.1	1.6		2315	4.8	1.5
13	0455	7.0	2.1	28	0445	6.7	2.0
Th	1125	3.7	1.1	F	1100	4.7	1.4
	1805	8.4	2.6		1720	8.1	2.5
14	0035	4.4	1.3	29	0000	4.1	1.2
F	0620	6.2	1.9	Sa	0600	6.3	1.9
	1155	5.0	1.5		1105	5.5	1.7
	1835	8.5	2.6		1745	8.3	2.5
15	0155	3.7	1.1	30	0055	3.5	1.1
Sa	0815	5.9	1.8	Su	0715	6.1	1.9
	1245	6.1	1.9		1230	6.5	2.0
	1900	8.5	2.6		1800	8.5	2.6
				31	0155	2.9	0.9
				M	0945	6.4	2.0
					1245	7.1	2.2
					1800	8.7	2.7

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0300	2.4	0.7	16	0415	2.7	0.8
Tu	1230	7.4	2.3	W	1505	8.3	2.5
	1520	8.2	2.5		1830	8.0	2.4
	1815	9.0	2.7		2100	7.6	2.3
2	0410	1.9	0.6	17	0515	2.7	0.8
W	1315	7.7	2.3	Th	1530	8.2	2.5
	1610	8.4	2.6		1800	7.9	2.4
	1905	9.1	2.8		2230	7.3	2.2
3	0510	1.4	0.4	18	0605	2.7	0.8
Th	1330	7.7	2.3	F	1550	7.9	2.4
	1645	8.4	2.6		1910	7.5	2.3
	2015	9.1	2.8		2045	7.6	2.3
4	0605	1.1	0.3	19	0650	2.8	0.9
F	1330	7.4	2.3	Sa	1555	7.6	2.3
	1745	8.1	2.5		1915	7.1	2.2
	2145	9.0	2.7		2320	7.4	2.3
5	0655	0.9	0.3	20	0720	3.0	0.9
Sa	1625	7.8	2.4	Su	1530	7.4	2.3
	1845	7.5	2.3		1940	6.5	2.0
	2340	8.9	2.7				
6	0740	1.1	0.3	21	0040	7.4	2.3
Su	1530	7.5	2.3	M	0755	3.2	1.0
	1945	6.7	2.0		1445	7.4	2.3
					2010	5.9	1.8
7	0100	8.6	2.6	22	0130	7.4	2.3
M	0820	1.6	0.5	Tu	0820	3.7	1.1
	1515	7.7	2.3		1500	7.6	2.3
	2035	5.8	1.8		2050	5.1	1.6
8	0155	8.3	2.5	23	0220	7.3	2.2
Tu	0900	2.4	0.7	W	0850	4.2	1.3
	1530	7.9	2.4		1510	7.8	2.4
	2125	4.9	1.5		2120	4.3	1.3
9	0300	7.8	2.4	24	0315	7.2	2.2
W	0940	3.4	1.0	Th	0915	4.9	1.5
	1600	8.2	2.5		1530	8.0	2.4
	2215	4.1	1.2		2200	3.6	1.1
10	0410	7.3	2.2	25	0410	7.0	2.1
Th	1015	4.5	1.4	F	0945	5.6	1.7
	1625	8.4	2.6		1545	8.3	2.5
	2315	3.4	1.0		2245	2.9	0.9
11	0525	6.8	2.1	26	0525	6.9	2.1
F	1100	5.6	1.7	Sa	1005	6.4	2.0
	1650	8.5	2.6		1550	8.4	2.6
					2330	2.4	0.7
12	0000	2.9	0.9	27	0615	6.8	2.1
Sa	0910	6.8	2.1	Su	1045	7.1	2.2
	1110	6.6	2.0		1545	8.6	2.6
	1710	8.5	2.6				
13	0055	2.7	0.8	28	0015	2.1	0.6
Su	0900	6.9	2.1	M	0730	6.8	2.1
	1215	7.4	2.3		1200	7.7	2.3
	1730	8.4	2.6		1545	8.9	2.7
14	0200	2.7	0.8	29	0110	1.9	0.6
M	1130	7.7	2.3	Tu	1000	7.6	2.3
	1410	8.1	2.5		1245	8.2	2.5
	1655	8.3	2.5		1610	9.0	2.7
15	0305	2.7	0.8	30	0215	1.9	0.6
Tu	1510	8.3	2.5	W	1130	8.0	2.4
					1410	8.5	2.6
					1655	8.9	2.7

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VICTORIA, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0330	1.9	0.6	16	0415	3.3	1.0
Th	1215	8.0	2.4	F	1345	8.1	2.5
	1530	8.4	2.6		1745	7.2	2.2
	1810	8.5	2.6		2130	6.7	2.0
2	0440	1.9	0.6	17	0510	3.6	1.1
F	1420	8.1	2.5	Sa	1325	7.9	2.4
	1705	7.8	2.4		1845	6.6	2.0
	2005	8.1	2.5		2300	6.6	2.0
3	0535	2.1	0.6	18	0550	3.9	1.2
Sa	1415	7.9	2.4	Su	1310	7.8	2.4
	1805	7.0	2.1		1910	6.0	1.8
	2245	7.8	2.4		2345	6.6	2.0
4	0625	2.4	0.7	19	0630	4.4	1.3
Su	1330	7.8	2.4	M	1310	7.8	2.4
	1855	6.0	1.8		1920	5.2	1.6
5	0005	7.7	2.3	20	0055	6.7	2.0
M	0705	3.1	0.9	Tu	0700	4.9	1.5
	1345	7.9	2.4		1315	8.0	2.4
	1940	4.9	1.5		1955	4.3	1.3
6	0130	7.5	2.3	21	0205	6.9	2.1
Tu	0750	3.9	1.2	W	0730	5.5	1.7
	1400	8.2	2.5		1330	8.2	2.5
	2025	3.9	1.2		2020	3.4	1.0
7	0225	7.4	2.3	22	0310	7.1	2.2
W	0830	4.8	1.5	Th	0755	6.2	1.9
	1430	8.4	2.6		1350	8.5	2.6
	2110	3 0	0.9		2100	2.5	0.8
8	0345	7.3	2.2	23	0425	7.3	2.2
Th	0905	5.8	1.8	F	0840	6.9	2.1
	1455	8.6	2.6		1355	8.7	2.7
	2155	2.3	0.7		2140	1.8	0.5
9	0640	7.3	2.2	24	0705	7.7	2.3
F	0945	6.7	2.0	Sa	0855	7.5	2.3
	1510	8.7	2.7		1355	9.0	2.7
	2240	1.9	0.6		2215	1.2	0.4
10	0810	7.7	2.3	25	0515	7.5	2.3
Sa	1010	7.5	2.3	Su	0945	8.0	2.4
	1530	8.7	2.7		1355	9.3	2.8
	2320	1.8	0.5		2300	1.0	0.3
11	0645	7.3	2.2	26	0615	7.5	2.3
Su	1045	8.0	2.4	M	1115	8.6	2.6
	1500	8.6	2.6		1410	9.4	2.9
					2355	1.0	0.3
12	0005	2.0	0.6	27	0745	7.8	2.4
M	0845	7.9	2.4	Tu	1200	8.8	2.7
	1145	8.4	2.6		1440	9.4	2.9
	1415	8.6	2.6				
13	0100	2.3	0.7	28	0045	1.2	0.4
Tu	1315	8.6	2.6	W	0915	8.2	2.5
					1215	8.8	2.7
					1505	9.1	2.8
14	0200	2.7	0.8	29	0145	1.7	0.5
W	1320	8.5	2.6	Th	1215	8.7	2.7
					1500	8.5	2.6
					1845	8.0	2.4
15	0310	3.0	0.9	30	0250	2.2	0.7
Th	1340	8.4	2.6	F	1225	8.6	2.6
	1830	7.4	2.3		1600	7.8	2.4
	1945	7.2	2.2		2015	7.3	2.2
				31	0355	2.8	0.9
				Sa	1225	8.4	2.6
					1730	6.7	2.0
					2125	6.8	2.1

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0455	3.5	1.1	16	0415	5.1	1.6
Su	1215	8.4	2.6	M	1140	8.4	2.6
	1815	5.5	1.7		1855	4.9	1.5
	2320	6.7	2.0				
2	0545	4.4	1.3	17	0025	6.1	1.9
M	1215	8.5	2.6	Tu	0500	5.8	1.8
	1900	4.3	1.3		1150	8.6	2.6
					1900	3.9	1.2
3	0105	6.8	2.1	18	0340	6.6	2.0
Tu	0630	5.3	1.6	W	0545	6.5	2.0
	1240	8.7	2.7		1155	8.8	2.7
	1935	3.2	1.0		1930	2.9	0.9
4	0340	7.1	2.2	19	0215	6.9	2.1
W	0710	6.2	1.9	Th	0630	7.2	2.2
	1300	8.9	2.7		1200	9.1	2.8
	2010	2.2	0.7		2000	1.9	0.6
5	0505	7.6	2.3	20	0245	7.3	2.2
Th	0800	7.0	2.1	F	0715	7.9	2.4
	1330	9.0	2.7		1210	9.4	2.9
	2055	1.6	0.5		2040	1.1	0.3
6	0620	8.1	2.5	21	0345	7.7	2.3
F	0840	7.8	2.4	Sa	0830	8.5	2.6
	1345	9.1	2.8		1215	9.8	3.0
	2135	1.2	0.4		2115	0.5	0.2
7	0725	8.5	2.6	22	0430	7.9	2.4
Sa	0900	8.3	2.5	Su	0915	8.9	2.7
	1325	9.1	2.8		1230	10.0	3.0
	2210	1.1	0.3		2200	0.1	0.0
8	0545	7.9	2.4	23	0515	8.0	2.4
Su	1015	8.7	2.7	M	1015	9.2	2.8
	1305	9.1	2.8		1310	10.1	3.1
	2255	1.2	0.4		2245	0.1	0.0
9	0645	8.1	2.5	24	0615	8.2	2.5
M	1015	8.9	2.7	Tu	1100	9.3	2.8
	1300	9.0	2.7		1345	9.9	3.0
	2335	1.6	0.5		2335	0.4	0.1
10	1110	9.0	2.7	25	1015	9.2	2.8
Tu				W	1140	9.1	2.8
					1415	9.5	2.9
11	0020	2.1	0.6	26	0020	1.0	0.3
W	1115	8.9	2.7	Th	1030	9.1	2.8
					1315	8.7	2.7
					1450	8.8	2.7
12	0105	2.6	0.8	27	0110	1.8	0.5
Th	1130	8.8	2.7	F	1045	9.0	2.7
	1620	7.8	2.4		1400	8.0	2.4
	2105	5.9	1.8		1830	7.4	2.3
13	0155	3.2	1.0	28	0215	2.8	0.9
F	1130	8.6	2.6	Sa	1045	8.9	2.7
	1500	7.9	2.4		1530	6.8	2.1
	1830	6.9	2.1		2015	6.4	2.0
14	0245	3.8	1.2	29	0300	3.9	1.2
Sa	1130	8.5	2.6	Su	1045	8.9	2.7
	1730	6.6	2.0		1745	5.3	1.6
	2000	6.2	1.9		2220	6.0	1.8
15	0340	4.4	1.3	30	0400	5.1	1.6
Su	1145	8.4	2.6	M	1055	9.1	2.8
	1910	5.7	1.7		1815	4.1	1.2
	2210	5.9	1.8				

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0230	6.5	2.0	16	0115	6.3	1.9
Tu	0445	6.2	1.9	W	0415	6.9	2.1
	1115	9.2	2.8		1015	9.2	2.8
	1845	2.9	0.9		1830	3.0	0.9
2	0400	7.3	2.2	17	0215	7.0	2.1
W	0545	7.2	2.2	Th	0500	7.7	2.3
	1140	9.4	2.9		1025	9.5	2.9
	1920	2.0	0.6		1905	2.0	0.6
3	0315	7.7	2.3	18	0245	7.5	2.3
Th	0630	8.0	2.4	F	0545	8.4	2.6
	1200	9.5	2.9		1030	9.9	3.0
	2000	1.4	0.4		1940	1.0	0.3
4	0345	8.0	2.4	19	0315	7.9	2.4
F	0730	8.6	2.6	Sa	0700	9.0	2.7
	1145	9.5	2.9		1055	10.3	3.1
	2035	1.0	0.3		2020	0.3	0.1
5	0430	8.2	2.5	20	0345	8.0	2.4
Sa	0815	9.0	2.7	Su	0800	9.3	2.8
	1130	9.6	2.9		1130	10.6	3.2
	2115	0.9	0.3		2100	-0.2	-0.1
6	0445	8.2	2.5	21	0430	8.2	2.5
Su	0900	9.2	2.8	M	0900	9.5	2.9
	1155	9.6	2.9		1215	10.6	3.2
	2155	0.9	0.3		2150	-0.3	-0.1
7	0545	8.4	2.6	22	0500	8.2	2.5
M	0915	9.3	2.8	Tu	0930	9.3	2.8
	1215	9.5	2.9		1305	10.4	3.2
	2235	1.2	0.4		2230	-0.1	0.0
8	0615	8.4	2.6	23	0845	9.2	2.8
Tu	1000	9.2	2.8	W	1005	9.1	2.8
	1245	9.2	2.8		1350	9.9	3.0
	2310	1.5	0.5		2315	0.5	0.2
9	0955	9.1	2.8	24	0900	9.1	2.8
W	2350	2.0	0.6	Th	1145	8.6	2.6
					1430	9.1	2.8
10	1000	9.0	2.7	25	0000	1.4	0.4
Th	1415	8.4	2.6	F	0900	9.0	2.7
	1645	7.8	2.4		1315	7.8	2.4
					1515	8.0	2.4
11	0020	2.6	0.8	26	0045	2.6	0.8
F	1000	8.9	2.7	Sa	0855	9.1	2.8
	1315	8.2	2.5		1525	6.7	2.0
	1630	7.5	2.3		1745	6.7	2.0
12	0055	3.3	1.0	27	0125	3.9	1.2
Sa	1005	8.8	2.7	Su	0905	9.2	2.8
	1545	7.0	2.1		1630	5.4	1.6
	1730	6.6	2.0		2030	5.8	1.8
13	0120	4.1	1.2	28	0200	5.2	1.6
Su	1005	8.8	2.7	M	0920	9.4	2.9
	1600	6.3	1.9		1720	4.1	1.2
	1915	5.8	1.8				
14	0140	4.9	1.5	29	0030	6.2	1.9
M	1005	8.9	2.7	Tu	0400	6.7	2.0
	1815	5.0	1.5		0945	9.5	2.9
	2230	5.6	1.7		1755	3.1	0.9
15	0400	6.1	1.9	30	0300	7.4	2.3
Tu	1010	9.0	2.7	W	0445	7.7	2.3
	1815	4.1	1.2		1005	9.6	2.9
					1830	2.3	0.7
				31	0345	8.2	2.5
				Th	0545	8.5	2.6
					1030	9.6	2.9
					1905	1.7	0.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 2.5 feet (0.8 meter) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0005	-0.1	0.0	16	0015	2.6	0.8
Th	0745	16.6	5.1	F	0750	15.4	4.7
	1255	12.1	3.7		1310	11.4	3.5
	1705	14.5	4.4		1720	13.0	4.0
2	0055	0.3	0.1	17	0045	2.8	0.9
F	0825	16.6	5.1	Sa	0815	15.5	4.7
	1350	11.5	3.5		1350	10.9	3.3
	1810	13.8	4.2		1755	12.6	3.8
3	0140	1.2	0.4	18	0115	3.3	1.0
Sa	0905	16.6	5.1	Su	0840	15.5	4.7
	1455	10.6	3.2		1435	10.2	3.1
	1920	12.9	3.9		1855	12.1	3.7
4	0220	2.5	0.8	19	0145	4.1	1.2
Su	0945	16.4	5.0	M	0900	15.5	4.7
	1600	9.5	2.9		1515	9.4	2.9
	2035	11.9	3.6		1955	11.6	3.5
5	0305	4.3	1.3	20	0220	5.2	1.6
M	1020	16.2	4.9	Tu	0925	15.5	4.7
	1700	8.2	2.5		1600	8.4	2.6
	2155	11.1	3.4		2100	11.2	3.4
6	0345	6.2	1.9	21	0255	6.6	2.0
Tu	1055	15.8	4.8	W	0945	15.3	4.7
	1800	7.0	2.1		1650	7.2	2.2
	2330	10.8	3.3		2225	11.0	3.4
7	0440	8.2	2.5	22	0345	8.2	2.5
W	1125	15.3	4.7	Th	1015	15.1	4.6
	1855	5.8	1.8		1740	6.0	1.8
					2355	11.3	3.4
8	0125	11.2	3.4	23	0430	9.9	3.0
Th	0545	10.0	3.0	F	1045	14.9	4.5
	1155	14.7	4.5		1830	4.7	1.4
	1945	4.8	1.5				
9	0315	12.4	3.8	24	0210	12.2	3.7
F	0705	11.3	3.4	Sa	0545	11.4	3.5
	1225	14.1	4.3		1115	14.8	4.5
	2025	4.1	1.2		1925	3.6	1.1
10	0420	13.6	4.1	25	0345	13.4	4.1
Sa	0830	12.1	3.7	Su	0720	12.4	3.8
	1255	13.6	4.1		1200	14.7	4.5
	2110	3.6	1.1		2025	2.5	0.8
11	0505	14.5	4.4	26	0445	14.5	4.4
Su	0950	12.3	3.7	M	0850	12.8	3.9
	1330	13.3	4.1		1255	14.6	4.5
	2145	3.2	1.0		2120	1.6	0.5
12	0545	15.0	4.6	27	0520	15.3	4.7
M	1045	12.3	3.7	Tu	0955	12.6	3.8
	1410	13.2	4.0		1400	14.6	4.5
	2230	2.9	0.9		2215	0.9	0.3
13	0620	15.3	4.7	28	0605	15.7	4.8
Tu	1120	12.2	3.7	W	1055	12.2	3.7
	1455	13.2	4.0		1515	14.6	4.5
	2305	2.7	0.8		2315	0.6	0.2
14	0650	15.4	4.7	29	0640	16.0	4.9
W	1200	12.0	3.7	Th	1150	11.6	3.5
	1545	13.2	4.0		1625	14.5	4.4
	2345	2.6	0.8		2355	0.7	0.2
15	0720	15.4	4.7	30	0715	16.1	4.9
Th	1230	11.7	3.6	F	1240	10.7	3.3
	1630	13.1	4.0		1725	14.2	4.3
				31	0040	1.3	0.4
				Sa	0745	16.2	4.9
					1330	9.7	3.0
					1830	13.6	4.1

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0120	2.5	0.8	16	0055	4.3	1.3
Su	0820	16.2	4.9	M	0745	15.1	4.6
	1420	8.6	2.6		1355	8.1	2.5
	1930	12.9	3.9		1910	12.5	3.8
2	0200	4.0	1.2	17	0125	5.4	1.6
M	0850	16.0	4.9	Tu	0800	15.1	4.6
	1515	7.5	2.3		1435	7.1	2.2
	2035	12.2	3.7		2005	12.2	3.7
3	0240	5.9	1.8	18	0200	6.7	2.0
Tu	0920	15.7	4.8	W	0825	15.1	4.6
	1605	6.5	2.0		1510	6.1	1.9
	2145	11.6	3.5		2110	12.1	3.7
4	0315	7.8	2.4	19	0235	8.2	2.5
W	0945	15.2	4.6	Th	0845	14.9	4.5
	1700	5.7	1.7		1600	5.1	1.6
	2320	11.5	3.5		2225	12.1	3.7
5	0400	9.6	2.9	20	0325	9.8	3.0
Th	1010	14.5	4.4	F	0910	14.7	4.5
	1750	5.2	1.6		1650	4.4	1.3
6	0120	12.0	3.7	21	0010	12.3	3.7
F	0500	11.1	3.4	Sa	0420	11.2	3.4
	1035	13.8	4.2		0940	14.3	4.4
	1845	4.8	1.5		1745	3.7	1.1
7	0255	12.9	3.9	22	0210	13.1	4.0
Sa	0650	12.1	3.7	Su	0545	12.2	3.7
	1100	13.2	4.0		1025	14.0	4.3
	1940	4.5	1.4		1850	3.2	1.0
8	0355	13.7	4.2	23	0315	13.9	4.2
Su	0840	12.3	3.7	M	0735	12.5	3.8
	1145	12.7	3.9		1130	13.7	4.2
	2035	4.2	1.3		2000	2.7	0.8
9	0445	14.3	4.4	24	0410	14.5	4.4
M	0955	12.0	3.7	Tu	0900	12.2	3.7
	1245	12.5	3.8		1245	13.5	4.1
	2120	3.9	1.2		2105	2.2	0.7
10	0515	14.6	4.5	25	0455	15.0	4.6
Tu	1025	11.7	3.6	W	1000	11.5	3.5
	1400	12.5	3.8		1425	13.5	4.1
	2205	3.6	1.1		2200	1.9	0.6
11	0545	14.7	4.5	26	0530	15.2	4.6
W	1100	11.4	3.5	Th	1050	10.5	3.2
	1505	12.7	3.9		1540	13.7	4.2
	2250	3.3	1.0		2255	1.9	0.6
12	0615	14.8	4.5	27	0600	15.4	4.7
Th	1135	11.0	3.4	F	1135	9.5	2.9
	1600	12.9	3.9		1645	13.8	4.2
	2320	3.2	1.0		2335	2.4	0.7
13	0640	14.8	4.5	28	0630	15.4	4.7
F	1215	10.4	3.2	Sa	1220	8.3	2.5
	1650	13.0	4.0		1745	13.7	4.2
	2355	3.3	1.0				
14	0705	14.9	4.5				
Sa	1240	9.8	3.0				
	1735	13.0	4.0				
15	0025	3.6	1.1				
Su	0725	15.0	4.6				
	1315	9.0	2.7				
	1820	12.8	3.9				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0015	3.4	1.0	16	0620	14.5	4.4
Su	0700	15.5	4.7	M	1245	6.3	1.9
	1305	7.1	2.2		1835	13.1	4.0
	1840	13.5	4.1				
2	0055	4.7	1.4	17	0030	6.3	1.9
M	0725	15.4	4.7	Tu	0640	14.6	4.5
	1345	6.0	1.8		1315	5.3	1.6
	1940	13.1	4.0		1925	13.2	4.0
3	0135	6.2	1.9	18	0105	7.4	2.3
Tu	0750	15.1	4.6	W	0700	14.6	4.5
	1430	5.2	1.6		1355	4.3	1.3
	2040	12.8	3.9		2020	13.2	4.0
4	0210	7.9	2.4	19	0145	8.7	2.7
W	0815	14.7	4.5	Th	0725	14.5	4.4
	1510	4.7	1.4		1435	3.5	1.1
	2145	12.6	3.8		2130	13.2	4.0
5	0255	9.4	2.9	20	0230	10.0	3.0
Th	0830	14.1	4.3	F	0745	14.3	4.4
	1555	4.5	1.4		1520	3.1	0.9
	2305	12.6	3.8		2245	13.3	4.1
6	0345	10.7	3.3	21	0325	11.1	3.4
F	0855	13.4	4.1	Sa	0815	13.9	4.2
	1640	4.5	1.4		1610	2.9	0.9
7	0040	12.9	3.9	22	0010	13.5	4.1
Sa	0455	11.6	3.5	Su	0440	11.9	3.6
	0910	12.8	3.9		0850	13.4	4.1
	1735	4.7	1.4		1710	3.0	0.9
8	0200	13.3	4.1	23	0135	13.9	4.2
Su	0715	11.9	3.6	M	0615	12.1	3.7
	0945	12.2	3.7		0945	12.8	3.9
	1835	4.9	1.5		1820	3.2	1.0
9	0305	13.7	4.2	24	0240	14.3	4.4
M	0910	11.6	3.5	Tu	0805	11.5	3.5
	1045	11.6	3.5		1130	12.2	3.7
	1945	4.9	1.5		1935	3.3	1.0
10	0350	13.9	4.2	25	0325	14.5	4.4
Tu	0945	11.1	3.4	W	0905	10.5	3.2
	1240	11.4	3.5		1315	12.1	3.7
	2045	4.7	1.4		2045	3.4	1.0
11	0425	14.1	4.3	26	0405	14.7	4.5
W	1010	10.5	3.2	Th	0955	9.4	2.9
	1410	11.6	3.5		1445	12.5	3.8
	2135	4.5	1.4		2140	3.6	1.1
12	0455	14.2	4.3	27	0440	14.7	4.5
Th	1035	10.0	3.0	F	1035	8.1	2.5
	1515	12.1	3.7		1600	12.9	3.9
	2215	4.3	1.3		2230	4.1	1.2
13	0520	14.2	4.3	28	0505	14.8	4.5
F	1105	9.2	2.8	Sa	1115	6.8	2.1
	1605	12.5	3.8		1700	13.3	4.1
	2255	4.3	1.3		2315	5.0	1.5
14	0545	14.3	4.4	29	0535	14.7	4.5
Sa	1135	8.4	2.6	Su	1155	5.5	1.7
	1655	12.8	3.9		1755	13.5	4.1
	2325	4.7	1.4		2355	6.1	1.9
15	0605	14.4	4.4	30	0600	14.6	4.5
Su	1205	7.4	2.3	M	1235	4.5	1.4
	1745	13.0	4.0		1850	13.7	4.2
	2355	5.3	1.6				
				31	0035	7.4	2.3
				Tu	0625	14.4	4.4
					1310	3.7	1.1
					1945	13.7	4.2

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0110	8.7	2.7	16	0055	9.6	2.9
W	0645	14.1	4.3	Th	0600	14.3	4.4
	1350	3.2	1.0		1320	1.9	0.6
	2040	13.8	4.2		2030	14.3	4.4
2	0155	9.8	3.0	17	0140	10.6	3.2
Th	0705	13.6	4.1	F	0625	14.1	4.3
	1425	3.2	1.0		1405	1.5	0.5
	2140	13.7	4.2		2135	14.4	4.4
3	0240	10.7	3.3	18	0230	11.3	3.4
F	0725	13.1	4.0	Sa	0655	13.8	4.2
	1500	3.4	1.0		1455	1.6	0.5
	2245	13.7	4.2		2245	14.5	4.4
4	0345	11.4	3.5	19	0340	11.8	3.6
Sa	0740	12.5	3.8	Su	0740	13.2	4.0
	1540	3.9	1.2		1545	2.1	0.6
	2355	13.7	4.2		2355	14.5	4.4
5	0515	11.6	3.5	20	0510	11.7	3.6
Su	0750	11.9	3.6	M	0830	12.4	3.8
	1625	4.5	1.4		1645	2.7	0.8
6	0100	13.7	4.2	21	0100	14.6	4.5
M	0515	11.7	3.6	Tu	0700	11.0	3.4
	1015	10.9	3.3		0950	11.5	3.5
	1725	5.0	1.5		1755	3.5	1.1
7	0155	13.7	4.2	22	0150	14.6	4.5
Tu	0815	10.6	3.2	W	0805	9.8	3.0
	1200	10.3	3.1		1200	11.0	3.4
	1840	5.4	1.6		1905	4.3	1.3
8	0245	13.8	4.2	23	0230	14.6	4.5
W	0915	9.9	3.0	Th	0855	8.4	2.6
	1240	10.5	3.2		1350	11.2	3.4
	1950	5.5	1.7		2015	5.1	1.6
9	0320	13.8	4.2	24	0305	14.6	4.5
Th	0935	9.2	2.8	F	0935	7.0	2.1
	1405	10.9	3.3		1515	11.8	3.6
	2045	5.6	1.7		2110	5.9	1.8
10	0345	13.8	4.2	25	0340	14.5	4.4
F	1000	8.3	2.5	Sa	1015	5.6	1.7
	1510	11.5	3.5		1610	12.5	3.8
	2130	5.8	1.8		2200	6.8	2.1
11	0410	13.8	4.2	26	0410	14.3	4.4
Sa	1030	7.2	2.2	Su	1055	4.3	1.3
	1605	12.2	3.7		1715	13.2	4.0
	2210	6.2	1.9		2255	7.8	2.4
12	0435	13.9	4.2	27	0435	14.1	4.3
Su	1100	6.0	1.8	M	1130	3.3	1.0
	1700	12.8	3.9		1810	13.8	4.2
	2255	6.8	2.1		2335	8.9	2.7
13	0455	14.0	4.3	28	0500	13.9	4.2
M	1135	4.8	1.5	Tu	1200	2.6	0.8
	1745	13.3	4.1		1900	14.2	4.3
	2330	7.7	2.3				
14	0515	14.1	4.3	29	0015	9.8	3.0
Tu	1215	3.6	1.1	W	0520	13.6	4.1
	1840	13.8	4.2		1240	2.2	0.7
					1950	14.5	4.4
15	0005	8.7	2.7	30	0100	10.5	3.2
W	0535	14.3	4.4	Th	0540	13.3	4.1
	1245	2.6	0.8		1310	2.2	0.7
	1935	14.1	4.3		2035	14.6	4.5

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0145	11.0	3.4	16	0135	11.7	3.6
F	0555	12.9	3.9	Sa	0545	14.0	4.3
	1345	2.4	0.7		1350	0.5	0.2
	2125	14.5	4.4		2135	15.3	4.7
2	0235	11.4	3.5	17	0235	11.8	3.6
Sa	0615	12.5	3.8	Su	0630	13.4	4.1
	1420	2.8	0.9		1435	1.0	0.3
	2215	14.4	4.4		2230	15.3	4.7
3	0345	11.5	3.5	18	0355	11.5	3.5
Su	0640	11.9	3.6	M	0730	12.5	3.8
	1455	3.4	1.0		1530	1.8	0.5
	2310	14.3	4.4		2325	15.2	4.6
4	0430	11.3	3.4	19	0515	10.8	3.3
M	0830	11.1	3.4	Tu	0850	11.6	3.5
	1540	4.1	1.2		1625	3.0	0.9
5	0000	14.1	4.3	20	0010	15.2	4.6
Tu	0445	11.2	3.4	W	0640	9.5	2.9
	0945	10.4	3.2		1045	10.7	3.3
	1630	4.8	1.5		1725	4.3	1.3
6	0045	14.0	4.3	21	0055	15.0	4.6
W	0810	9.8	3.0	Th	0740	8.0	2.4
	0955	10.0	3.0		1230	10.5	3.2
	1730	5.6	1.7		1835	5.8	1.8
7	0130	13.9	4.2	22	0135	14.8	4.5
Th	0820	9.0	2.7	F	0825	6.5	2.0
	1215	9.9	3.0		1400	11.0	3.4
	1835	6.2	1.9		1940	7.1	2.2
8	0205	13.8	4.2	23	0210	14.5	4.4
F	0855	7.9	2.4	Sa	0905	5.1	1.6
	1355	10.4	3.2		1525	11.8	3.6
	1940	6.9	2.1		2045	8.3	2.5
9	0230	13.8	4.2	24	0240	14.2	4.3
Sa	0920	6.7	2.0	Su	0950	3.9	1.2
	1505	11.3	3.4		1635	12.8	3.9
	2040	7.6	2.3		2140	9.3	2.8
10	0255	13.8	4.2	25	0310	13.9	4.2
Su	0950	5.4	1.6	M	1025	2.9	0.9
	1605	12.2	3.7		1730	13.7	4.2
	2130	8.3	2.5		2235	10.2	3.1
11	0315	13.8	4.2	26	0335	13.6	4.1
M	1020	4.0	1.2	Tu	1100	2.3	0.7
	1700	13.1	4.0		1820	14.4	4.4
	2215	9.1	2.8		2330	10.8	3.3
12	0345	14.0	4.3	27	0400	13.4	4.1
Tu	1055	2.7	0.8	W	1135	1.9	0.6
	1755	14.0	4.3		1905	14.8	4.5
	2305	9.9	3.0				
13	0405	14.2	4.3	28	0015	11.2	3.4
W	1135	1.6	0.5	Th	0425	13.1	4.0
	1850	14.6	4.5		1210	1.8	0.5
	2355	10.7	3.3		1950	14.9	4.5
14	0435	14.3	4.4	29	0055	11.4	3.5
Th	1215	0.8	0.2	F	0445	12.9	3.9
	1945	15.0	4.6		1245	2.0	0.6
					2025	14.9	4.5
15	0045	11.3	3.4	30	0145	11.5	3.5
F	0510	14.3	4.4	Sa	0510	12.6	3.8
	1300	0.4	0.1		1315	2.3	0.7
	2040	15.2	4.6		2105	14.9	4.5
				31	0230	11.5	3.5
				Su	0545	12.2	3.7
					1355	2.7	0.8
					2145	14.7	4.5

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0325	11.3	3.4	16	0345	10.5	3.2
M	0635	11.7	3.6	Tu	0755	12.2	3.7
	1425	3.3	1.0		1510	2.3	0.7
	2225	14.6	4.5		2240	15.7	4.8
2	0430	10.8	3.3	17	0500	9.4	2.9
Tu	0700	11.1	3.4	W	0915	11.2	3.4
	1505	4.0	1.2		1600	3.9	1.2
	2305	14.5	4.4		2320	15.5	4.7
3	0600	10.1	3.1	18	0605	7.9	2.4
W	0830	10.4	3.2	Th	1055	10.7	3.3
	1545	4.8	1.5		1655	5.7	1.7
	2340	14.4	4.4		2355	15.2	4.6
4	0640	9.2	2.8	19	0700	6.5	2.0
Th	1005	9.9	3.0	F	1235	10.6	3.2
	1630	5.9	1.8		1755	7.5	2.3
5	0010	14.2	4.3	20	0035	14.8	4.5
F	0720	8.1	2.5	Sa	0745	5.1	1.6
	1155	9.9	3.0		1415	11.3	3.4
	1730	7.1	2.2		1900	9.1	2.8
6	0040	14.1	4.3	21	0105	14.3	4.4
Sa	0755	6.8	2.1	Su	0835	4.0	1.2
	1335	10.5	3.2		1545	12.4	3.8
	1840	8.3	2.5		2015	10.3	3.1
7	0105	14.0	4.3	22	0140	13.9	4.2
Su	0825	5.4	1.6	M	0915	3.2	1.0
	1500	11.5	3.5		1645	13.4	4.1
	1950	9.4	2.9		2125	11.1	3.4
8	0130	14.0	4.3	23	0210	13.5	4.1
M	0905	4.0	1.2	Tu	0955	2.6	0.8
	1605	12.7	3.9		1735	14.2	4.3
	2055	10.3	3.1		2220	11.4	3.5
9	0200	14.1	4.3	24	0245	13.2	4.0
Tu	0945	2.6	0.8	W	1035	2.3	0.7
	1705	13.7	4.2		1820	14.7	4.5
	2155	11.0	3.4		2310	11.6	3.5
10	0235	14.2	4.3	25	0310	13.0	4.0
W	1025	1.4	0.4	Th	1110	2.2	0.7
	1800	14.6	4.5		1855	14.9	4.5
	2250	11.5	3.5		2355	11.6	3.5
11	0315	14.4	4.4	26	0345	12.9	3.9
Th	1110	0.5	0.2	F	1150	2.1	0.6
	1855	15.2	4.6		1930	14.9	4.5
	2340	11.9	3.6				
12	0355	14.5	4.4	27	0035	11.6	3.5
F	1200	0.0	0.0	Sa	0430	12.8	3.9
	1945	15.5	4.7		1225	2.2	0.7
					2015	14.9	4.5
13	0030	12.0	3.7	28	0115	11.4	3.5
Sa	0445	14.4	4.4	Su	0500	12.6	3.8
	1250	-0.2	-0.1		1300	2.5	0.8
	2030	15.7	4.8		2040	14.8	4.5
14	0130	11.8	3.6	29	0205	11.1	3.4
Su	0540	13.9	4.2	M	0545	12.3	3.7
	1335	0.2	0.1		1330	2.8	0.9
	2115	15.8	4.8		2110	14.8	4.5
15	0235	11.4	3.5	30	0255	10.7	3.3
M	0645	13.2	4.0	Tu	0640	11.7	3.6
	1420	1.0	0.3		1400	3.4	1.0
	2200	15.7	4.8		2140	14.8	4.5

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0345	10.1	3.1	16	0420	7.6	2.3
W	0740	11.1	3.4	Th	0930	11.4	3.5
	1435	4.2	1.3		1530	5.4	1.6
	2205	14.7	4.5		2225	15.4	4.7
2	0430	9.3	2.8	17	0515	6.4	2.0
Th	0845	10.6	3.2	F	1055	11.0	3.4
	1510	5.3	1.6		1620	7.4	2.3
	2230	14.6	4.5		2255	15.0	4.6
3	0515	8.2	2.5	18	0610	5.3	1.6
F	1005	10.3	3.1	Sa	1245	11.2	3.4
	1545	6.7	2.0		1720	9.2	2.8
	2255	14.5	4.4		2330	14.4	4.4
4	0615	7.1	2.2	19	0705	4.4	1.3
Sa	1140	10.3	3.1	Su	1420	12.0	3.7
	1645	8.2	2.5		1840	10.7	3.3
	2320	14.3	4.4				
5	0650	5.8	1.8	20	0000	13.8	4.2
Su	1320	11.0	3.4	M	0755	3.8	1.2
	1745	9.6	2.9		1545	13.0	4.0
	2350	14.2	4.3		2005	11.4	3.5
6	0735	4.5	1.4	21	0040	13.2	4.0
M	1505	12.1	3.7	Tu	0845	3.4	1.0
	1900	10.9	3.3		1645	13.8	4.2
					2115	11.7	3.6
7	0020	14.2	4.3	22	0115	12.9	3.9
Tu	0825	3.2	1.0	W	0930	3.1	0.9
	1610	13.2	4.0		1720	14.3	4.4
	2025	11.7	3.6		2215	11.7	3.6
8	0100	14.3	4.4	23	0200	12.7	3.9
W	0915	2.0	0.6	Th	1015	2.9	0.9
	1710	14.2	4.3		1800	14.5	4.4
	2130	12.1	3.7		2305	11.5	3.5
9	0150	14.4	4.4	24	0255	12.7	3.9
Th	1005	1.0	0.3	F	1055	2.7	0.8
	1800	14.9	4.5		1835	14.6	4.5
	2230	12.2	3.7		2340	11.3	3.4
10	0245	14.5	4.4	25	0345	12.8	3.9
F	1055	0.3	0.1	Sa	1135	2.6	0.8
	1845	15.3	4.7		1905	14.6	4.5
	2325	12.0	3.7				
11	0345	14.6	4.5	26	0015	11.0	3.4
Sa	1145	-0.1	0.0	Su	0440	12.8	3.9
	1925	15.6	4.8		1215	2.7	0.8
					1935	14.6	4.5
12	0020	11.6	3.5	27	0055	10.6	3.2
Su	0450	14.4	4.4	M	0515	12.6	3.8
	1235	0.0	0.0		1240	2.9	0.9
	2005	15.7	4.8		2000	14.6	4.5
13	0115	11.0	3.4	28	0130	10.1	3.1
M	0555	13.8	4.2	Tu	0605	12.4	3.8
	1320	0.7	0.2		1305	3.4	1.0
	2040	15.8	4.8		2020	14.7	4.5
14	0215	10.1	3.1	29	0210	9.5	2.9
Tu	0700	13.1	4.0	W	0655	11.9	3.6
	1400	1.9	0.6		1330	4.2	1.3
	2115	15.8	4.8		2040	14.7	4.5
15	0315	8.9	2.7	30	0255	8.7	2.7
W	0810	12.2	3.7	Th	0750	11.5	3.5
	1450	3.5	1.1		1405	5.2	1.6
	2150	15.7	4.8		2100	14.7	4.5
				31	0335	7.8	2.4
				F	0850	11.1	3.4
					1440	6.5	2.0
					2125	14.6	4.5

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0415	6.7	2.0	16	0515	4.5	1.4
Sa	1000	11.0	3.4	Su	1235	12.1	3.7
	1515	8.1	2.5		1650	10.6	3.2
	2145	14.4	4.4		2220	13.5	4.1
2	0505	5.7	1.7	17	0615	4.3	1.3
Su	1125	11.2	3.4	M	1410	12.8	3.9
	1615	9.6	2.9		1825	11.5	3.5
	2210	14.2	4.3		2250	12.9	3.9
3	0555	4.7	1.4	18	0710	4.2	1.3
M	1325	11.8	3.6	Tu	1515	13.4	4.1
	1710	10.9	3.3		2015	11.7	3.6
	2245	14.1	4.3		2340	12.4	3.8
4	0650	3.8	1.2	19	0810	4.1	1.2
Tu	1505	12.8	3.9	W	1605	13.9	4.2
	1845	11.8	3.6		2120	11.4	3.5
	2330	14.0	4.3				
5	0750	2.8	0.9	20	0050	12.1	3.7
W	1605	13.7	4.2	Th	0905	3.9	1.2
	2010	12.2	3.7		1650	14.1	4.3
					2210	11.1	3.4
6	0025	14.0	4.3	21	0205	12.1	3.7
Th	0855	2.0	0.6	F	0955	3.6	1.1
	1655	14.4	4.4		1725	14.1	4.3
	2125	12.2	3.7		2245	10.7	3.3
7	0135	14.1	4.3	22	0315	12.4	3.8
F	0945	1.2	0.4	Sa	1035	3.5	1.1
	1735	14.8	4.5		1755	14.2	4.3
	2220	11.8	3.6		2315	10.3	3.1
8	0250	14.2	4.3	23	0400	12.6	3.8
Sa	1045	0.7	0.2	Su	1110	3.4	1.0
	1815	15.1	4.6		1820	14.2	4.3
	2315	11.1	3.4		2350	9.8	3.0
9	0400	14.3	4.4	24	0445	12.8	3.9
Su	1130	0.7	0.2	M	1140	3.6	1.1
	1850	15.3	4.7		1845	14.2	4.3
10	0005	10.2	3.1	25	0020	9.1	2.8
M	0505	14.1	4.3	Tu	0530	12.7	3.9
	1215	1.2	0.4		1210	4.1	1.2
	1920	15.5	4.7		1900	14.3	4.4
11	0100	9.1	2.8	26	0055	8.3	2.5
Tu	0610	13.7	4.2	W	0615	12.6	3.8
	1300	2.2	0.7		1240	4.8	1.5
	1955	15.6	4.8		1920	14.4	4.4
12	0155	7.9	2.4	27	0135	7.5	2.3
W	0710	13.1	4.0	Th	0700	12.4	3.8
	1340	3.7	1.1		1305	5.8	1.8
	2020	15.5	4.7		1940	14.5	4.4
13	0245	6.7	2.0	28	0205	6.6	2.0
Th	0815	12.5	3.8	F	0755	12.2	3.7
	1420	5.6	1.7		1340	7.0	2.1
	2055	15.3	4.7		1955	14.4	4.4
14	0335	5.7	1.7	29	0250	5.7	1.7
F	0930	12.0	3.7	Sa	0855	12.1	3.7
	1500	7.4	2.3		1420	8.3	2.5
	2120	14.8	4.5		2015	14.3	4.4
15	0425	5.0	1.5	30	0325	4.9	1.5
Sa	1050	11.8	3.6	Su	1000	12.1	3.7
	1550	9.2	2.8		1500	9.6	2.9
	2150	14.2	4.3		2040	14.1	4.3
				31	0415	4.3	1.3
				M	1125	12.3	3.7
					1555	10.9	3.3
					2110	13.8	4.2

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0510	3.8	1.2	16	0615	4.8	1.5
Tu	1320	12.8	3.9	W	1430	13.7	4.2
	1710	11.8	3.6		2025	11.1	3.4
	2200	13.5	4.1		2300	11.4	3.5
2	0615	3.4	1.0	17	0725	4.9	1.5
W	1440	13.5	4.1	Th	1520	13.8	4.2
	1855	12.1	3.7		2120	10.6	3.2
	2300	13.3	4.1				
3	0725	3.0	0.9	18	0100	11.2	3.4
Th	1545	14.0	4.3	F	0830	4.9	1.5
	2030	11.9	3.6		1600	13.9	4.2
					2150	10.0	3.0
4	0015	13.2	4.0	19	0210	11.6	3.5
F	0835	2.5	0.8	Sa	0920	4.8	1.5
	1620	14.4	4.4		1630	13.9	4.2
	2125	11.2	3.4		2215	9.4	2.9
5	0150	13.3	4.1	20	0315	12.0	3.7
Sa	0930	2.1	0.6	Su	1000	4.7	1.4
	1655	14.7	4.5		1700	13.9	4.2
	2215	10.2	3.1		2250	8.7	2.7
6	0310	13.6	4.1	21	0400	12.5	3.8
Su	1025	2.1	0.6	M	1040	4.9	1.5
	1730	14.9	4.5		1720	13.9	4.2
	2300	9.1	2.8		2315	7.9	2.4
7	0420	13.8	4.2	22	0450	12.8	3.9
M	1110	2.5	0.8	Tu	1105	5.4	1.6
	1800	15.0	4.6		1740	14.0	4.3
	2350	7.8	2.4		2350	7.0	2.1
8	0520	13.9	4.2	23	0535	13.0	4.0
Tu	1155	3.4	1.0	W	1140	6.1	1.9
	1830	15.1	4.6		1755	14.1	4.3
9	0035	6.5	2.0	24	0020	6.0	1.8
W	0620	13.7	4.2	Th	0620	13.1	4.0
	1235	4.8	1.5		1210	7.0	2.1
	1855	15.1	4.6		1810	14.1	4.3
10	0120	5.4	1.6	25	0055	5.0	1.5
Th	0715	13.5	4.1	F	0705	13.3	4.1
	1315	6.3	1.9		1250	8.0	2.4
	1920	14.9	4.5		1830	14.2	4.3
11	0205	4.5	1.4	26	0130	4.2	1.3
F	0820	13.2	4.0	Sa	0800	13.4	4.1
	1355	7.9	2.4		1325	9.1	2.8
	1950	14.5	4.4		1850	14.1	4.3
12	0250	4.0	1.2	27	0205	3.6	1.1
Sa	0925	13.1	4.0	Su	0900	13.4	4.1
	1440	9.4	2.9		1405	10.2	3.1
	2010	13.9	4.2		1915	13.9	4.2
13	0330	3.9	1.2	28	0250	3.2	1.0
Su	1045	13.0	4.0	M	1005	13.5	4.1
	1535	10.6	3.2		1500	11.1	3.4
	2035	13.2	4.0		1940	13.6	4.1
14	0420	4.1	1.2	29	0340	3.1	0.9
M	1210	13.2	4.0	Tu	1130	13.6	4.1
	1650	11.4	3.5		1605	11.8	3.6
	2100	12.5	3.8		2015	13.2	4.0
15	0515	4.5	1.4	30	0435	3.2	1.0
Tu	1325	13.4	4.1	W	1300	13.8	4.2
	1855	11.6	3.5		1745	12.0	3.7
	2145	11.9	3.6		2110	12.7	3.9

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

VANCOUVER, BRITISH COLUMBIA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0545	3.4	1.0	16	0625	5.8	1.8
Th	1400	14.2	4.3	F	1415	14.0	4.3
	1925	11.4	3.5		2055	9.6	2.9
	2300	12.2	3.7				
2	0700	3.6	1.1	17	0050	10.5	3.2
F	1445	14.4	4.4	Sa	0735	6.1	1.9
	2030	10.5	3.2		1455	13.9	4.2
					2115	8.8	2.7
3	0050	12.1	3.7	18	0210	11.0	3.4
Sa	0805	3.7	1.1	Su	0830	6.4	2.0
	1530	14.6	4.5		1520	13.8	4.2
	2120	9.2	2.8		2145	7.9	2.4
4	0220	12.5	3.8	19	0310	11.7	3.6
Su	0905	4.0	1.2	M	0915	6.7	2.0
	1600	14.7	4.5		1545	13.8	4.2
	2200	7.8	2.4		2210	6.8	2.1
5	0335	13.0	4.0	20	0400	12.4	3.8
M	1000	4.5	1.4	Tu	0955	7.2	2.2
	1635	14.7	4.5		1605	13.8	4.2
	2245	6.4	2.0		2240	5.7	1.7
6	0435	13.6	4.1	21	0455	13.1	4.0
Tu	1050	5.4	1.6	W	1035	7.9	2.4
	1700	14.7	4.5		1625	13.9	4.2
	2325	5.0	1.5		2310	4.6	1.4
7	0535	13.9	4.2	22	0540	13.6	4.1
W	1130	6.6	2.0	Th	1110	8.7	2.7
	1730	14.7	4.5		1645	14.0	4.3
					2345	3.6	1.1
8	0015	3.9	1.2	23	0630	14.1	4.3
Th	0630	14.2	4.3	F	1155	9.5	2.9
	1210	7.8	2.4		1700	14.1	4.3
	1755	14.5	4.4				
9	0045	3.1	0.9	24	0015	2.8	0.9
F	0725	14.3	4.4	Sa	0715	14.5	4.4
	1255	9.0	2.7		1235	10.3	3.1
	1815	14.1	4.3		1725	14.1	4.3
10	0125	2.8	0.9	25	0055	2.2	0.7
Sa	0820	14.4	4.4	Su	0810	14.7	4.5
	1340	10.1	3.1		1315	11.0	3.4
	1840	13.7	4.2		1750	14.0	4.3
11	0200	2.8	0.9	26	0135	1.9	0.6
Su	0930	14.3	4.4	M	0905	14.8	4.5
	1430	10.9	3.3		1405	11.6	3.5
	1900	13.1	4.0		1815	13.7	4.2
12	0240	3.2	1.0	27	0220	2.0	0.6
M	1020	14.2	4.3	Tu	1010	14.8	4.5
	1525	11.4	3.5		1510	12.0	3.7
	1915	12.4	3.8		1850	13.3	4.1
13	0325	3.8	1.2	28	0310	2.4	0.7
Tu	1130	14.1	4.3	W	1120	14.8	4.5
	1715	11.6	3.5		1630	11.9	3.6
	1945	11.8	3.6		1945	12.5	3.8
14	0410	4.6	1.4	29	0410	3.0	0.9
W	1235	14.0	4.3	Th	1220	14.9	4.5
	1715	11.5	3.5		1815	11.2	3.4
	2215	10.8	3.3		2130	11.6	3.5
15	0510	5.2	1.6	30	0515	3.8	1.2
Th	1330	14.0	4.3	F	1310	14.9	4.5
	2025	10.4	3.2		1930	10.0	3.0
	2235	10.5	3.2		2330	11.1	3.4
				31	0625	4.7	1.4
				Sa	1355	14.9	4.5
					2015	8.5	2.6

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0115	11.4	3.5	16	0200	10.6	3.2
Su	0735	5.6	1.7	M	0720	8.1	2.5
	1430	14.9	4.5		1400	14.1	4.3
	2105	6.9	2.1		2105	6.5	2.0
2	0245	12.1	3.7	17	0310	11.6	3.5
M	0840	6.6	2.0	Tu	0815	8.9	2.7
	1500	14.8	4.5		1420	14.0	4.3
	2145	5.4	1.6		2130	5.3	1.6
3	0355	13.0	4.0	18	0405	12.7	3.9
Tu	0935	7.6	2.3	W	0910	9.6	2.9
	1535	14.7	4.5		1445	14.0	4.3
	2220	4.0	1.2		2200	4.0	1.2
4	0455	13.8	4.2	19	0500	13.7	4.2
W	1025	8.7	2.7	Th	1000	10.3	3.1
	1600	14.5	4.4		1505	14.1	4.3
	2300	2.9	0.9		2235	2.9	0.9
5	0550	14.6	4.5	20	0550	14.5	4.4
Th	1110	9.6	2.9	F	1045	11.0	3.4
	1630	14.3	4.4		1535	14.3	4.4
	2340	2.2	0.7		2310	1.9	0.6
6	0645	15.1	4.6	21	0635	15.2	4.6
F	1200	10.4	3.2	Sa	1135	11.5	3.5
	1650	14.0	4.3		1600	14.4	4.4
					2350	1.2	0.4
7	0015	1.9	0.6	22	0725	15.6	4.8
Sa	0730	15.4	4.7	Su	1220	12.0	3.7
	1250	11.1	3.4		1635	14.4	4.4
	1715	13.6	4.1				
8	0045	2.0	0.6	23	0035	0.8	0.2
Su	0830	15.4	4.7	M	0815	15.8	4.8
	1335	11.5	3.5		1310	12.2	3.7
	1740	13.2	4.0		1710	14.2	4.3
9	0125	2.3	0.7	24	0115	0.8	0.2
M	0910	15.3	4.7	Tu	0905	15.9	4.8
	1425	11.7	3.6		1410	12.2	3.7
	1755	12.7	3.9		1750	13.7	4.2
10	0200	2.9	0.9	25	0205	1.3	0.4
Tu	0955	15.1	4.6	W	1000	15.9	4.8
	1530	11.7	3.6		1520	12.0	3.7
	1815	12.1	3.7		1850	12.9	3.9
11	0240	3.7	1.1	26	0255	2.1	0.6
W	1045	14.9	4.5	Th	1045	15.9	4.8
	1615	11.5	3.5		1645	11.2	3.4
	2030	11.1	3.4		2005	11.9	3.6
12	0320	4.5	1.4	27	0350	3.3	1.0
Th	1135	14.7	4.5	F	1130	15.8	4.8
	1745	10.8	3.3		1810	9.9	3.0
	2130	10.4	3.2		2155	11.0	3.4
13	0415	5.4	1.6	28	0445	4.8	1.5
F	1220	14.5	4.4	Sa	1215	15.7	4.8
	1955	9.7	3.0		1905	8.3	2.5
	2210	9.9	3.0		2355	10.7	3.3
14	0500	6.3	1.9	29	0550	6.4	2.0
Sa	1300	14.4	4.4	Su	1255	15.5	4.7
	2010	8.7	2.7		1955	6.6	2.0
15	0035	10.0	3.0	30	0135	11.2	3.4
Su	0605	7.2	2.2	M	0700	7.9	2.4
	1335	14.2	4.3		1330	15.2	4.6
	2040	7.7	2.3		2040	5.1	1.6

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0305	12.3	3.7	16	0315	11.9	3.6
Tu	0815	9.4	2.9	W	0715	10.8	3.3
	1400	14.9	4.5		1255	14.3	4.4
	2115	3.7	1.1		2050	4.3	1.3
2	0415	13.5	4.1	17	0415	13.2	4.0
W	0910	10.4	3.2	Th	0830	11.6	3.5
	1430	14.5	4.4		1325	14.4	4.4
	2155	2.7	0.8		2125	3.0	0.9
3	0520	14.5	4.4	18	0510	14.3	4.4
Th	1010	11.2	3.4	F	0935	12.2	3.7
	1500	14.2	4.3		1400	14.5	4.4
	2235	2.0	0.6		2205	1.9	0.6
4	0610	15.3	4.7	19	0555	15.2	4.6
F	1105	11.7	3.6	Sa	1030	12.5	3.8
	1530	13.9	4.2		1440	14.6	4.5
	2310	1.7	0.5		2245	1.1	0.3
5	0650	15.7	4.8	20	0640	15.8	4.8
Sa	1155	11.9	3.6	Su	1120	12.6	3.8
	1550	13.6	4.1		1525	14.8	4.5
	2345	1.7	0.5		2335	0.5	0.2
6	0730	15.9	4.8	21	0720	16.1	4.9
Su	1240	12.0	3.7	M	1210	12.6	3.8
	1630	13.4	4.1		1615	14.7	4.5
7	0025	2.0	0.6	22	0020	0.2	0.1
M	0810	15.9	4.8	Tu	0805	16.3	5.0
	1325	12.0	3.7		1315	12.3	3.7
	1650	13.0	4.0		1710	14.4	4.4
8	0100	2.3	0.7	23	0105	0.5	0.2
Tu	0850	15.7	4.8	W	0845	16.4	5.0
	1415	11.8	3.6		1415	11.8	3.6
	1730	12.6	3.8		1810	13.7	4.2
9	0135	2.9	0.9	24	0150	1.2	0.4
W	0925	15.6	4.8	Th	0925	16.5	5.0
	1515	11.5	3.5		1510	10.9	3.3
	1805	12.0	3.7		1925	12.7	3.9
10	0205	3.6	1.1	25	0235	2.5	0.8
Th	1000	15.4	4.7	F	1005	16.4	5.0
	1625	11.0	3.4		1620	9.7	3.0
	1850	11.3	3.4		2050	11.7	3.6
11	0240	4.5	1.4	26	0320	4.2	1.3
F	1045	15.2	4.6	Sa	1040	16.3	5.0
	1730	10.2	3.1		1725	8.2	2.5
	2015	10.5	3.2		2215	11.0	3.4
12	0315	5.5	1.7	27	0410	6.1	1.9
Sa	1105	15.1	4.6	Su	1115	16.0	4.9
	1825	9.2	2.8		1825	6.6	2.0
	2200	9.9	3.0				
13	0355	6.8	2.1	28	0000	10.9	3.3
Su	1135	14.9	4.5	M	0510	8.2	2.5
	1905	8.0	2.4		1145	15.6	4.8
	2355	9.9	3.0		1915	5.2	1.6
14	0445	8.2	2.5	29	0200	11.6	3.5
M	1200	14.6	4.5	Tu	0615	10.0	3.0
	1940	6.8	2.1		1225	15.1	4.6
					2005	4.0	1.2
15	0145	10.7	3.3	30	0330	12.9	3.9
Tu	0550	9.6	2.9	W	0745	11.3	3.4
	1230	14.4	4.4		1300	14.5	4.4
	2010	5.5	1.7		2045	3.2	1.0
				31	0440	14.1	4.3
				Th	0900	12.0	3.7
					1335	14.1	4.3
					2135	2.6	0.8

Time meridian 120° W. 0000 is midnight. 1200 is noon.
Heights are referred to the Canadian chart datum of soundings. Subtract 3.8 feet (1.2 meters) to refer these levels to the datum of N.O.S. charts.

KETCHIKAN, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0135	15.9	4.8	16	0143	14.3	4.4
Th	0706	2.8	0.9	F	0713	4.1	1.2
	1310	19.0	5.8		1316	16.1	4.9
	1947	-3.8	-1.2		1947	-1.1	-0.3
2	0220	16.2	4.9	17	0214	14.5	4.4
F	0757	2.5	0.8	Sa	0749	3.9	1.2
	1358	18.5	5.6		1350	15.9	4.8
	2035	-3.1	-0.9		2017	-0.8	-0.2
3	0306	16.3	5.0	18	0244	14.7	4.5
Sa	0846	2.5	0.8	Su	0824	3.7	1.1
	1451	17.4	5.3		1425	15.4	4.7
	2117	-1.9	-0.6		2048	-0.3	-0.1
4	0351	16.1	4.9	19	0315	14.8	4.5
Su	0941	2.8	0.9	M	0902	3.5	1.1
	1541	15.9	4.8		1502	14.6	4.5
	2205	-0.4	-0.1		2121	0.5	0.2
5	0437	15.7	4.8	20	0347	14.9	4.5
M	1039	3.1	0.9	Tu	0944	3.4	1.0
	1637	14.2	4.3		1544	13.6	4.1
	2250	1.3	0.4		2155	1.6	0.5
6	0529	15.3	4.7	21	0421	14.8	4.5
Tu	1143	3.3	1.0	W	1032	3.3	1.0
	1740	12.6	3.8		1632	12.5	3.8
	2340	3.0	0.9		2237	2.8	0.9
7	0622	14.8	4.5	22	0503	14.8	4.5
W	1253	3.4	1.0	Th	1132	3.2	1.0
	1851	11.4	3.5		1735	11.4	3.5
					2325	4.1	1.2
8	0038	4.5	1.4	23	0554	14.7	4.5
Th	0717	14.5	4.4	F	1245	2.8	0.9
	1403	3.0	0.9		1901	10.7	3.3
	2016	10.8	3.3				
9	0142	5.6	1.7	24	0031	5.2	1.6
F	0815	14.3	4.4	Sa	0658	14.7	4.5
	1511	2.4	0.7		1406	2.0	0.6
	2134	11.0	3.4		2039	10.8	3.3
10	0250	6.1	1.9	25	0151	5.8	1.8
Sa	0913	14.4	4.4	Su	0813	15.1	4.6
	1606	1.6	0.5		1518	0.7	0.2
	2238	11.6	3.5		2201	11.8	3.6
11	0353	6.2	1.9	26	0313	5.6	1.7
Su	1006	14.7	4.5	M	0922	16.0	4.9
	1653	0.9	0.3		1623	-0.8	-0.2
	2326	12.2	3.7		2300	13.1	4.0
12	0443	5.9	1.8	27	0419	4.8	1.5
M	1051	15.1	4.6	Tu	1025	17.0	5.2
	1733	0.1	0.0		1718	-2.2	-0.7
					2352	14.4	4.4
13	0008	12.9	3.9	28	0518	3.6	1.1
Tu	0523	5.4	1.6	W	1123	18.1	5.5
	1131	15.6	4.8		1805	-3.3	-1.0
	1810	-0.4	-0.1				
14	0042	13.4	4.1	29	0037	15.6	4.8
W	0605	5.0	1.5	Th	0608	2.5	0.8
	1207	15.9	4.8		1213	18.7	5.7
	1844	-0.9	-0.3		1850	-3.7	-1.1
15	0113	13.9	4.2	30	0118	16.5	5.0
Th	0638	4.5	1.4	F	0657	1.5	0.5
	1243	16.2	4.9		1301	18.8	5.7
	1915	-1.1	-0.3		1932	-3.6	-1.1
				31	0158	17.0	5.2
				Sa	0745	0.9	0.3
					1347	18.3	5.6
					2011	-2.9	-0.9

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0237	17.2	5.2	16	0208	15.8	4.8
Su	0829	0.7	0.2	M	0803	1.5	0.5
	1435	17.3	5.3		1406	15.6	4.8
	2051	-1.7	-0.5		2019	-0.4	-0.1
2	0317	16.9	5.2	17	0238	15.9	4.8
M	0917	1.0	0.3	Tu	0839	1.3	0.4
	1519	15.8	4.8		1443	14.9	4.5
	2129	-0.1	0.0		2051	0.5	0.2
3	0355	16.4	5.0	18	0307	15.9	4.8
Tu	1005	1.5	0.5	W	0917	1.2	0.4
	1608	14.0	4.3		1524	13.8	4.2
	2205	1.7	0.5		2123	1.7	0.5
4	0436	15.5	4.7	19	0339	15.7	4.8
W	1058	2.2	0.7	Th	1005	1.4	0.4
	1701	12.3	3.7		1613	12.6	3.8
	2247	3.5	1.1		2200	3.1	0.9
5	0521	14.6	4.5	20	0421	15.2	4.6
Th	1158	2.9	0.9	F	1101	1.8	0.5
	1806	10.8	3.3		1717	11.3	3.4
	2335	5.2	1.6		2250	4.5	1.4
6	0615	13.6	4.1	21	0514	14.7	4.5
F	1313	3.3	1.0	Sa	1211	2.1	0.6
	1935	9.9	3.0		1843	10.3	3.1
					2359	5.8	1.8
7	0041	6.5	2.0	22	0625	14.2	4.3
Sa	0721	13.0	4.0	Su	1343	1.8	0.5
	1433	3.1	0.9		2029	10.5	3.2
	2113	10.0	3.0				
8	0212	7.1	2.2	23	0135	6.3	1.9
Su	0837	13.0	4.0	M	0752	14.3	4.4
	1542	2.4	0.7		1505	0.8	0.2
	2227	10.8	3.3		2153	11.6	3.5
9	0332	6.8	2.1	24	0308	5.7	1.7
M	0942	13.5	4.1	Tu	0913	15.1	4.6
	1635	1.5	0.5		1611	-0.5	-0.2
	2315	11.7	3.6		2251	13.2	4.0
10	0430	6.1	1.9	25	0417	4.3	1.3
Tu	1035	14.2	4.3	W	1022	16.2	4.9
	1718	0.6	0.2		1704	-1.8	-0.5
	2349	12.6	3.8		2336	14.7	4.5
11	0512	5.2	1.6	26	0512	2.7	0.8
W	1117	15.0	4.6	Th	1115	17.3	5.3
	1752	-0.2	-0.1		1749	-2.6	-0.8
12	0020	13.4	4.1	27	0015	16.0	4.9
Th	0550	4.3	1.3	F	0600	1.2	0.4
	1155	15.6	4.8		1205	17.9	5.5
	1823	-0.8	-0.2		1829	-2.9	-0.9
13	0049	14.2	4.3	28	0053	16.9	5.2
F	0624	3.4	1.0	Sa	0644	0.0	0.0
	1228	16.1	4.9		1250	18.1	5.5
	1852	-1.2	-0.4		1908	-2.7	-0.8
14	0114	14.9	4.5				
Sa	0656	2.6	0.8				
	1301	16.2	4.9				
	1921	-1.3	-0.4				
15	0142	15.4	4.7				
Su	0728	2.0	0.6				
	1334	16.1	4.9				
	1950	-1.0	-0.3				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0129	17.5	5.3	16	0103	16.2	4.9
Su	0726	-0.7	-0.2	M	0706	0.0	0.0
	1334	17.6	5.4		1317	15.9	4.8
	1943	-1.9	-0.6		1918	-0.4	-0.1
2	0203	17.6	5.4	17	0131	16.6	5.1
M	0806	-0.9	-0.3	Tu	0740	-0.6	-0.2
	1415	16.6	5.1		1352	15.5	4.7
	2019	-0.7	-0.2		1950	0.3	0.1
3	0238	17.2	5.2	18	0200	16.8	5.1
Tu	0848	-0.5	-0.2	W	0817	-0.8	-0.2
	1456	15.3	4.7		1431	14.8	4.5
	2051	0.8	0.2		2022	1.2	0.4
4	0312	16.4	5.0	19	0232	16.6	5.1
W	0931	0.2	0.1	Th	0857	-0.7	-0.2
	1539	13.7	4.2		1514	13.7	4.2
	2127	2.4	0.7		2059	2.4	0.7
5	0347	15.3	4.7	20	0310	16.1	4.9
Th	1015	1.2	0.4	F	0944	-0.1	0.0
	1626	12.1	3.7		1605	12.5	3.8
	2202	4.1	1.2		2139	3.7	1.1
6	0426	14.1	4.3	21	0354	15.3	4.7
F	1108	2.3	0.7	Sa	1042	0.7	0.2
	1725	10.6	3.2		1711	11.2	3.4
	2244	5.6	1.7		2234	5.1	1.6
7	0515	13.0	4.0	22	0453	14.4	4.4
Sa	1217	3.2	1.0	Su	1155	1.4	0.4
	1847	9.6	2.9		1841	10.6	3.2
	2345	6.9	2.1		2354	6.1	1.9
8	0625	12.1	3.7	23	0610	13.6	4.1
Su	1347	3.5	1.1	M	1327	1.5	0.5
	2041	9.6	2.9		2021	11.0	3.4
9	0133	7.4	2.3	24	0137	6.1	1.9
M	0757	11.9	3.6	Tu	0745	13.6	4.1
	1506	3.0	0.9		1449	0.9	0.3
	2156	10.4	3.2		2133	12.2	3.7
10	0313	6.9	2.1	25	0305	4.9	1.5
Tu	0917	12.4	3.8	W	0908	14.3	4.4
	1603	2.1	0.6		1553	-0.1	0.0
	2241	11.5	3.5		2227	13.7	4.2
11	0409	5.8	1.8	26	0411	3.2	1.0
W	1011	13.3	4.1	Th	1014	15.3	4.7
	1645	1.1	0.3		1643	-0.9	-0.3
	2313	12.6	3.8		2310	15.2	4.6
12	0451	4.5	1.4	27	0500	1.4	0.4
Th	1056	14.3	4.4	F	1107	16.2	4.9
	1721	0.3	0.1		1723	-1.3	-0.4
	2345	13.7	4.2		2346	16.4	5.0
13	0526	3.3	1.0	28	0544	-0.1	0.0
F	1133	15.1	4.6	Sa	1153	16.7	5.1
	1749	-0.3	-0.1		1802	-1.4	-0.4
14	0010	14.7	4.5	29	0021	17.2	5.2
Sa	0600	2.0	0.6	Su	0626	-1.2	-0.4
	1208	15.6	4.8		1236	16.7	5.1
	1820	-0.7	-0.2		1839	-1.0	-0.3
15	0037	15.5	4.7	30	0054	17.5	5.3
Su	0632	0.9	0.3	M	0705	-1.8	-0.5
	1242	15.9	4.8		1317	16.3	5.0
	1849	-0.7	-0.2		1912	-0.2	-0.1
				31	0127	17.4	5.3
				Tu	0741	-1.8	-0.5
					1357	15.6	4.8
					1946	0.8	0.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KETCHIKAN, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0158	16.9	5.2	16	0129	17.3	5.3
W	0820	-1.4	-0.4	Th	0800	-2.4	-0.7
	1436	14.5	4.4		1422	14.5	4.4
	2019	2.1	0.6		2003	2.2	0.7
2	0230	16.1	4.9	17	0208	17.0	5.2
Th	0858	-0.6	-0.2	F	0843	-2.0	-0.6
	1515	13.2	4.0		1511	13.6	4.1
	2053	3.4	1.0		2045	3.2	1.0
3	0306	15.0	4.6	18	0251	16.3	5.0
F	0939	0.5	0.2	Sa	0935	-1.2	-0.4
	1602	11.9	3.6		1608	12.6	3.8
	2128	4.7	1.4		2133	4.3	1.3
4	0341	13.8	4.2	19	0342	15.3	4.7
Sa	1029	1.7	0.5	Su	1034	-0.2	-0.1
	1655	10.7	3.3		1717	11.8	3.6
	2210	5.9	1.8		2239	5.3	1.6
5	0426	12.6	3.8	20	0445	14.2	4.3
Su	1132	2.8	0.9	M	1146	0.7	0.2
	1811	9.9	3.0		1839	11.6	3.5
	2314	6.9	2.1				
6	0535	11.7	3.6	21	0006	5.7	1.7
M	1251	3.3	1.0	Tu	0607	13.3	4.1
	1944	9.9	3.0		1306	1.1	0.3
					1959	12.2	3.7
7	0056	7.2	2.2	22	0138	5.2	1.6
Tu	0708	11.3	3.4	W	0737	13.1	4.0
	1410	3.2	1.0		1420	1.0	0.3
	2103	10.6	3.2		2101	13.3	4.1
8	0233	6.6	2.0	23	0255	3.8	1.2
W	0833	11.7	3.6	Th	0856	13.5	4.1
	1513	2.5	0.8		1519	0.8	0.2
	2150	11.7	3.6		2153	14.5	4.4
9	0334	5.3	1.6	24	0355	2.1	0.6
Th	0934	12.5	3.8	F	0959	14.2	4.3
	1556	1.8	0.5		1611	0.6	0.2
	2225	12.8	3.9		2235	15.6	4.8
10	0419	3.8	1.2	25	0444	0.5	0.2
F	1022	13.4	4.1	Sa	1051	14.8	4.5
	1635	1.2	0.4		1654	0.5	0.2
	2256	14.0	4.3		2312	16.5	5.0
11	0456	2.2	0.7	26	0526	-0.8	-0.2
Sa	1104	14.2	4.3	Su	1139	15.1	4.6
	1707	0.7	0.2		1733	0.8	0.2
	2324	15.1	4.6		2347	17.0	5.2
12	0529	0.7	0.2	27	0605	-1.7	-0.5
Su	1143	14.9	4.5	M	1221	15.2	4.6
	1741	0.5	0.2		1808	1.2	0.4
	2353	16.1	4.9				
13	0605	-0.6	-0.2	28	0022	17.1	5.2
M	1221	15.3	4.7	Tu	0643	-2.1	-0.6
	1814	0.5	0.2		1301	14.9	4.5
					1843	1.8	0.5
14	0024	16.8	5.1	29	0055	16.9	5.2
Tu	0640	-1.6	-0.5	W	0719	-2.0	-0.6
	1301	15.4	4.7		1340	14.4	4.4
	1849	0.8	0.2		1917	2.5	0.8
15	0055	17.2	5.2	30	0127	16.3	5.0
W	0719	-2.2	-0.7	Th	0757	-1.6	-0.5
	1339	15.1	4.6		1419	13.7	4.2
	1924	1.4	0.4		1952	3.4	1.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0201	15.6	4.8	16	0153	17.3	5.3
F	0833	-0.9	-0.3	Sa	0835	-2.9	-0.9
	1501	12.9	3.9		1510	13.9	4.2
	2025	4.2	1.3		2039	3.5	1.1
2	0235	14.7	4.5	17	0243	16.6	5.1
Sa	0915	0.1	0.0	Su	0928	-2.1	-0.6
	1544	12.0	3.7		1608	13.4	4.1
	2104	5.1	1.6		2136	4.2	1.3
3	0312	13.7	4.2	18	0339	15.5	4.7
Su	1000	1.1	0.3	M	1024	-1.0	-0.3
	1633	11.2	3.4		1708	13.1	4.0
	2149	5.9	1.8		2242	4.6	1.4
4	0357	12.7	3.9	19	0443	14.3	4.4
M	1053	2.0	0.6	Tu	1127	0.0	0.0
	1735	10.8	3.3		1817	13.1	4.0
	2252	6.5	2.0				
5	0458	11.8	3.6	20	0002	4.6	1.4
Tu	1154	2.7	0.8	W	0559	13.2	4.0
	1847	10.8	3.3		1236	0.9	0.3
					1923	13.5	4.1
6	0015	6.6	2.0	21	0123	3.9	1.2
W	0612	11.2	3.4	Th	0718	12.6	3.8
	1302	3.0	0.9		1341	1.5	0.5
	1950	11.3	3.4		2020	14.2	4.3
7	0142	6.0	1.8	22	0234	2.7	0.8
Th	0735	11.2	3.4	F	0836	12.6	3.8
	1404	2.9	0.9		1441	2.0	0.6
	2041	12.2	3.7		2111	14.9	4.5
8	0247	4.7	1.4	23	0333	1.3	0.4
F	0845	11.6	3.5	Sa	0942	12.8	3.9
	1457	2.6	0.8		1534	2.3	0.7
	2121	13.2	4.0		2156	15.6	4.8
9	0336	3.1	0.9	24	0422	0.1	0.0
Sa	0942	12.4	3.8	Su	1036	13.2	4.0
	1542	2.3	0.7		1620	2.6	0.8
	2159	14.3	4.4		2237	16.0	4.9
10	0418	1.5	0.5	25	0507	-0.9	-0.3
Su	1033	13.2	4.0	M	1126	13.5	4.1
	1622	2.1	0.6		1702	2.9	0.9
	2235	15.4	4.7		2315	16.3	5.0
11	0457	-0.2	-0.1	26	0547	-1.5	-0.5
M	1118	13.9	4.2	Tu	1209	13.6	4.1
	1702	1.9	0.6		1741	3.2	1.0
	2310	16.4	5.0		2351	16.3	5.0
12	0539	-1.6	-0.5	27	0625	-1.8	-0.5
Tu	1200	14.5	4.4	W	1250	13.7	4.2
	1741	1.9	0.6		1818	3.5	1.1
	2347	17.2	5.2				
13	0618	-2.7	-0.8	28	0027	16.1	4.9
W	1246	14.7	4.5	Th	0702	-1.8	-0.5
	1823	2.1	0.6		1328	13.5	4.1
					1855	3.8	1.2
14	0026	17.6	5.4	29	0100	15.8	4.8
Th	0702	-3.3	-1.0	F	0739	-1.5	-0.5
	1332	14.7	4.5		1408	13.2	4.0
	1905	2.4	0.7		1931	4.2	1.3
15	0108	17.7	5.4	30	0137	15.3	4.7
F	0747	-3.3	-1.0	Sa	0817	-1.0	-0.3
	1418	14.4	4.4		1446	12.8	3.9
	1950	2.9	0.9		2009	4.6	1.4
				31	0214	14.7	4.5
				Su	0854	-0.4	-0.1
					1528	12.4	3.8
					2048	5.1	1.6

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0253	13.9	4.2	16	0332	15.8	4.8
M	0936	0.3	0.1	Tu	1008	-1.6	-0.5
	1610	12.1	3.7		1646	14.5	4.4
	2135	5.5	1.7		2234	3.2	1.0
2	0335	13.1	4.0	17	0434	14.5	4.4
Tu	1018	1.1	0.3	W	1101	-0.3	-0.1
	1658	11.9	3.6		1741	14.4	4.4
	2229	5.7	1.7		2343	3.2	1.0
3	0424	12.2	3.7	18	0540	13.1	4.0
W	1106	1.8	0.5	Th	1157	1.1	0.3
	1748	12.0	3.7		1837	14.5	4.4
	2330	5.6	1.7				
4	0525	11.5	3.5	19	0056	2.8	0.9
Th	1156	2.5	0.8	F	0652	12.0	3.7
	1837	12.3	3.7		1256	2.4	0.7
					1935	14.6	4.5
5	0044	5.1	1.6	20	0205	2.1	0.6
F	0636	11.0	3.4	Sa	0810	11.5	3.5
	1252	3.0	0.9		1357	3.3	1.0
	1929	12.9	3.9		2028	14.7	4.5
6	0148	4.0	1.2	21	0307	1.2	0.4
Sa	0751	11.0	3.4	Su	0921	11.5	3.5
	1348	3.3	1.0		1457	4.0	1.2
	2015	13.6	4.1		2121	14.9	4.5
7	0247	2.6	0.8	22	0403	0.4	0.1
Su	0900	11.4	3.5	M	1022	11.8	3.6
	1445	3.5	1.1		1551	4.4	1.3
	2103	14.6	4.5		2206	15.1	4.6
8	0342	1.0	0.3	23	0448	-0.3	-0.1
M	1001	12.1	3.7	Tu	1116	12.2	3.7
	1534	3.4	1.0		1640	4.5	1.4
	2148	15.5	4.7		2249	15.3	4.7
9	0430	-0.6	-0.2	24	0531	-0.9	-0.3
Tu	1054	12.9	3.9	W	1203	12.6	3.8
	1627	3.3	1.0		1723	4.5	1.4
	2233	16.5	5.0		2331	15.4	4.7
10	0516	-2.1	-0.6	25	0611	-1.2	-0.4
W	1146	13.6	4.1	Th	1240	12.9	3.9
	1715	3.1	0.9		1803	4.4	1.3
	2318	17.3	5.3				
11	0602	-3.2	-1.0	26	0010	15.5	4.7
Th	1235	14.2	4.3	F	0648	-1.4	-0.4
	1802	2.9	0.9		1317	13.1	4.0
					1840	4.3	1.3
12	0006	17.8	5.4	27	0046	15.4	4.7
F	0650	-3.8	-1.2	Sa	0723	-1.4	-0.4
	1324	14.6	4.5		1355	13.2	4.0
	1851	2.8	0.9		1917	4.2	1.3
13	0055	18.0	5.5	28	0121	15.2	4.6
Sa	0737	-4.0	-1.2	Su	0758	-1.3	-0.4
	1413	14.7	4.5		1428	13.2	4.0
	1942	2.8	0.9		1955	4.2	1.3
14	0145	17.7	5.4	29	0159	14.9	4.5
Su	0825	-3.6	-1.1	M	0832	-0.9	-0.3
	1501	14.7	4.5		1503	13.2	4.0
	2035	2.9	0.9		2031	4.3	1.3
15	0237	17.0	5.2	30	0234	14.3	4.4
M	0917	-2.8	-0.9	Tu	0907	-0.3	-0.1
	1554	14.6	4.5		1538	13.1	4.0
	2131	3.1	0.9		2114	4.3	1.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0310	13.6	4.1	16	0413	14.5	4.4
W	0941	0.4	0.1	Th	1026	0.0	0.0
	1613	13.1	4.0		1700	15.3	4.7
	2200	4.3	1.3		2311	1.8	0.5
2	0355	12.7	3.9	17	0514	12.8	3.9
Th	1021	1.2	0.4	F	1114	1.8	0.5
	1652	13.2	4.0		1750	14.8	4.5
	2250	4.2	1.3				
3	0445	11.8	3.6	18	0017	2.0	0.6
F	1103	2.2	0.7	Sa	0622	11.4	3.5
	1734	13.3	4.1		1208	3.4	1.0
	2346	3.9	1.2		1844	14.3	4.4
4	0546	11.0	3.4	19	0128	2.0	0.6
Sa	1151	3.1	0.9	Su	0741	10.5	3.2
	1820	13.5	4.1		1311	4.7	1.4
					1945	13.9	4.2
5	0055	3.2	1.0	20	0241	1.7	0.5
Su	0658	10.5	3.2	M	0905	10.4	3.2
	1247	3.9	1.2		1423	5.4	1.6
	1913	13.9	4.2		2047	13.8	4.2
6	0201	2.2	0.7	21	0342	1.1	0.3
M	0823	10.6	3.2	Tu	1014	10.8	3.3
	1351	4.5	1.4		1529	5.6	1.7
	2013	14.5	4.4		2145	14.0	4.3
7	0309	0.8	0.2	22	0433	0.4	0.1
Tu	0937	11.2	3.4	W	1109	11.5	3.5
	1457	4.6	1.4		1625	5.3	1.6
	2111	15.3	4.7		2233	14.4	4.4
8	0406	-0.7	-0.2	23	0520	-0.2	-0.1
W	1041	12.1	3.7	Th	1151	12.1	3.7
	1601	4.2	1.3		1710	4.9	1.5
	2209	16.2	4.9		2318	14.8	4.5
9	0500	-2.1	-0.6	24	0557	-0.8	-0.2
Th	1136	13.1	4.0	F	1229	12.7	3.9
	1657	3.6	1.1		1752	4.4	1.3
	2305	17.2	5.2		2358	15.2	4.6
10	0550	-3.3	-1.0	25	0632	-1.2	-0.4
F	1226	14.1	4.3	Sa	1300	13.2	4.0
	1750	2.9	0.9		1828	3.9	1.2
	2355	17.9	5.5				
11	0639	-4.0	-1.2	26	0033	15.4	4.7
Sa	1311	14.9	4.5	Su	0705	-1.4	-0.4
	1842	2.2	0.7		1330	13.6	4.1
					1903	3.4	1.0
12	0047	18.2	5.5	27	0108	15.4	4.7
Su	0726	-4.3	-1.3	M	0734	-1.4	-0.4
	1357	15.5	4.7		1400	13.9	4.2
	1932	1.7	0.5		1937	3.1	0.9
13	0137	18.0	5.5	28	0140	15.2	4.6
M	0811	-3.9	-1.2	Tu	0806	-1.1	-0.3
	1443	15.8	4.8		1430	14.1	4.3
	2024	1.4	0.4		2011	2.8	0.9
14	0227	17.3	5.3	29	0215	14.7	4.5
Tu	0854	-3.0	-0.9	W	0835	-0.6	-0.2
	1525	15.9	4.8		1459	14.3	4.4
	2115	1.4	0.4		2048	2.7	0.8
15	0320	16.0	4.9	30	0248	14.0	4.3
W	0939	-1.6	-0.5	Th	0907	0.2	0.1
	1613	15.7	4.8		1528	14.3	4.4
	2212	1.6	0.5		2125	2.6	0.8
				31	0325	13.1	4.0
				F	0939	1.2	0.4
					1600	14.2	4.3
					2212	2.6	0.8

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0411	12.1	3.7	16	0547	11.0	3.4
Sa	1013	2.3	0.7	Su	1119	4.5	1.4
	1639	14.1	4.3		1753	13.6	4.1
	2303	2.6	0.8				
2	0506	11.1	3.4	17	0047	2.3	0.7
Su	1059	3.5	1.1	M	0712	10.0	3.0
	1725	13.9	4.2		1228	5.8	1.8
					1901	12.8	3.9
3	0009	2.4	0.7	18	0208	2.4	0.7
M	0625	10.2	3.1	Tu	0849	9.9	3.0
	1154	4.6	1.4		1354	6.5	2.0
	1825	13.9	4.2		2017	12.6	3.8
4	0126	1.9	0.6	19	0321	1.9	0.6
Tu	0755	10.0	3.0	W	1003	10.5	3.2
	1314	5.4	1.6		1518	6.2	1.9
	1934	14.1	4.3		2126	13.0	4.0
5	0244	0.9	0.3	20	0417	1.2	0.4
W	0926	10.7	3.3	Th	1054	11.4	3.5
	1436	5.3	1.6		1617	5.5	1.7
	2049	14.8	4.5		2221	13.7	4.2
6	0351	-0.5	-0.2	21	0459	0.4	0.1
Th	1030	12.0	3.7	F	1131	12.3	3.7
	1550	4.6	1.4		1659	4.6	1.4
	2156	15.9	4.8		2304	14.4	4.4
7	0448	-1.9	-0.6	22	0536	-0.3	-0.1
F	1123	13.3	4.1	Sa	1200	13.1	4.0
	1648	3.4	1.0		1736	3.7	1.1
	2254	17.0	5.2		2341	15.1	4.6
8	0539	-3.1	-0.9	23	0606	-0.8	-0.2
Sa	1209	14.6	4.5	Su	1229	13.8	4.2
	1742	2.1	0.6		1808	2.9	0.9
	2349	17.9	5.5				
9	0622	-3.8	-1.2	24	0016	15.5	4.7
Su	1251	15.7	4.8	M	0636	-1.1	-0.3
	1832	1.0	0.3		1256	14.5	4.4
					1843	2.1	0.6
10	0038	18.3	5.6	25	0049	15.6	4.8
M	0706	-3.9	-1.2	Tu	0705	-1.1	-0.3
	1332	16.5	5.0		1323	14.9	4.5
	1919	0.1	0.0		1915	1.5	0.5
11	0124	18.1	5.5	26	0121	15.4	4.7
Tu	0747	-3.4	-1.0	W	0732	-0.8	-0.2
	1411	16.9	5.2		1348	15.3	4.7
	2006	-0.3	-0.1		1947	1.1	0.3
12	0212	17.2	5.2	27	0153	15.0	4.6
W	0827	-2.4	-0.7	Th	0800	-0.2	-0.1
	1451	16.8	5.1		1417	15.4	4.7
	2054	-0.3	-0.1		2019	0.9	0.3
13	0259	15.9	4.8	28	0227	14.3	4.4
Th	0907	-0.9	-0.3	F	0830	0.7	0.2
	1531	16.4	5.0		1443	15.3	4.7
	2143	0.1	0.0		2056	0.8	0.2
14	0347	14.2	4.3	29	0304	13.4	4.1
F	0947	0.9	0.3	Sa	0902	1.8	0.5
	1612	15.6	4.8		1515	15.1	4.6
	2234	0.9	0.3		2139	1.1	0.3
15	0444	12.5	3.8	30	0349	12.3	3.7
Sa	1030	2.8	0.9	Su	0938	3.0	0.9
	1658	14.6	4.5		1555	14.7	4.5
	2334	1.7	0.5		2232	1.5	0.5
				31	0444	11.1	3.4
				M	1023	4.3	1.3
					1642	14.1	4.3
					2337	1.9	0.6

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0605	10.2	3.1	16	0131	3.0	0.9
Tu	1125	5.5	1.7	W	0823	10.0	3.0
	1748	13.6	4.1		1333	7.1	2.2
					1946	11.8	3.6
2	0102	1.9	0.6	17	0248	2.7	0.8
W	0748	10.1	3.1	Th	0934	10.8	3.3
	1258	6.1	1.9		1500	6.5	2.0
	1914	13.6	4.1		2101	12.3	3.7
3	0229	1.1	0.3	18	0345	1.9	0.6
Th	0919	11.1	3.4	F	1021	11.8	3.6
	1433	5.6	1.7		1558	5.4	1.6
	2040	14.3	4.4		2159	13.2	4.0
4	0337	-0.2	-0.1	19	0427	1.2	0.4
F	1017	12.6	3.8	Sa	1056	12.8	3.9
	1545	4.2	1.3		1638	4.1	1.2
	2150	15.5	4.7		2243	14.1	4.3
5	0433	-1.5	-0.5	20	0500	0.5	0.2
Sa	1103	14.1	4.3	Su	1123	13.8	4.2
	1643	2.5	0.8		1712	2.9	0.9
	2248	16.7	5.1		2320	14.8	4.5
6	0518	-2.4	-0.7	21	0531	0.0	0.0
Su	1145	15.6	4.8	M	1150	14.7	4.5
	1732	0.9	0.3		1745	1.8	0.5
	2339	17.6	5.4		2352	15.3	4.7
7	0601	-2.9	-0.9	22	0601	-0.2	-0.1
M	1224	16.7	5.1	Tu	1216	15.4	4.7
	1816	-0.5	-0.2		1817	0.8	0.2
8	0026	17.9	5.5	23	0027	15.5	4.7
Tu	0641	-2.7	-0.8	W	0629	-0.1	0.0
	1259	17.4	5.3		1242	16.0	4.9
	1901	-1.4	-0.4		1846	0.0	0.0
9	0111	17.6	5.4	24	0100	15.5	4.7
W	0719	-2.1	-0.6	Th	0658	0.2	0.1
	1337	17.7	5.4		1308	16.4	5.0
	1943	-1.8	-0.5		1921	-0.6	-0.2
10	0155	16.8	5.1	25	0135	15.1	4.6
Th	0755	-0.9	-0.3	F	0727	0.9	0.3
	1414	17.4	5.3		1336	16.5	5.0
	2027	-1.5	-0.5		1953	-0.8	-0.2
11	0238	15.5	4.7	26	0211	14.5	4.4
F	0832	0.6	0.2	Sa	0758	1.7	0.5
	1451	16.7	5.1		1408	16.3	5.0
	2110	-0.8	-0.2		2032	-0.6	-0.2
12	0323	14.0	4.3	27	0251	13.6	4.1
Sa	0909	2.2	0.7	Su	0833	2.8	0.9
	1528	15.6	4.8		1440	15.9	4.8
	2159	0.4	0.1		2117	-0.1	0.0
13	0413	12.3	3.7	28	0339	12.5	3.8
Su	0949	3.9	1.2	M	0912	4.0	1.2
	1609	14.3	4.4		1523	15.1	4.6
	2252	1.6	0.5		2209	0.7	0.2
14	0515	10.9	3.3	29	0440	11.4	3.5
M	1037	5.5	1.7	Tu	1004	5.2	1.6
	1702	13.0	4.0		1616	14.3	4.4
					2317	1.5	0.5
15	0001	2.6	0.8	30	0604	10.7	3.3
Tu	0639	10.0	3.0	W	1117	6.2	1.9
	1146	6.7	2.0		1732	13.5	4.1
	1815	12.0	3.7				

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KETCHIKAN, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0045	1.7	0.5	16	0155	3.3	1.0
Th	0741	11.0	3.4	F	0845	11.3	3.4
	1300	6.3	1.9		1428	6.6	2.0
	1905	13.3	4.1		2023	11.8	3.6
2	0210	1.3	0.4	17	0255	2.8	0.9
F	0900	12.2	3.7	Sa	0932	12.3	3.7
	1431	5.2	1.6		1524	5.3	1.6
	2033	14.0	4.3		2123	12.5	3.8
3	0318	0.4	0.1	18	0340	2.3	0.7
Sa	0952	13.7	4.2	Su	1007	13.3	4.1
	1540	3.4	1.0		1606	3.8	1.2
	2142	15.1	4.6		2211	13.4	4.1
4	0409	-0.4	-0.1	19	0415	1.8	0.5
Su	1038	15.2	4.6	M	1039	14.4	4.4
	1630	1.5	0.5		1643	2.4	0.7
	2238	16.1	4.9		2251	14.1	4.3
5	0455	-0.9	-0.3	20	0451	1.5	0.5
M	1116	16.6	5.1	Tu	1104	15.4	4.7
	1718	-0.2	-0.1		1715	1.0	0.3
	2326	16.7	5.1		2328	14.7	4.5
6	0534	-1.0	-0.3	21	0522	1.3	0.4
Tu	1152	17.5	5.3	W	1133	16.2	4.9
	1800	-1.6	-0.5		1747	-0.2	-0.1
7	0012	17.0	5.2	22	0005	15.1	4.6
W	0612	-0.7	-0.2	Th	0553	1.4	0.4
	1227	18.0	5.5		1201	16.9	5.2
	1842	-2.3	-0.7		1823	-1.2	-0.4
8	0054	16.7	5.1	23	0042	15.2	4.6
Th	0648	0.0	0.0	F	0626	1.7	0.5
	1302	18.0	5.5		1232	17.3	5.3
	1921	-2.4	-0.7		1858	-1.7	-0.5
9	0137	16.0	4.9	24	0119	15.1	4.6
F	0726	1.0	0.3	Sa	0701	2.2	0.7
	1337	17.5	5.3		1305	17.4	5.3
	2000	-2.0	-0.6		1934	-1.9	-0.6
10	0219	15.0	4.6	25	0201	14.6	4.5
Sa	0758	2.3	0.7	Su	0737	2.9	0.9
	1410	16.6	5.1		1341	17.1	5.2
	2042	-1.1	-0.3		2016	-1.6	-0.5
11	0302	13.7	4.2	26	0246	13.9	4.2
Su	0837	3.6	1.1	M	0818	3.8	1.2
	1448	15.5	4.7		1421	16.5	5.0
	2123	0.1	0.0		2104	-0.9	-0.3
12	0349	12.4	3.8	27	0338	13.0	4.0
M	0915	5.0	1.5	Tu	0904	4.8	1.5
	1528	14.2	4.3		1509	15.6	4.8
	2215	1.5	0.5		2200	0.0	0.0
13	0449	11.3	3.4	28	0440	12.3	3.7
Tu	1002	6.2	1.9	W	1005	5.7	1.7
	1616	12.9	3.9		1608	14.6	4.5
	2317	2.6	0.8		2306	0.9	0.3
14	0604	10.5	3.2	29	0559	12.0	3.7
W	1113	7.2	2.2	Th	1125	6.2	1.9
	1726	11.8	3.6		1727	13.6	4.1
15	0036	3.3	1.0	30	0025	1.5	0.5
Th	0734	10.6	3.2	F	0718	12.5	3.8
	1258	7.3	2.2		1300	5.8	1.8
	1859	11.4	3.5		1857	13.2	4.0
				31	0141	1.6	0.5
				Sa	0826	13.6	4.1
					1423	4.4	1.3
					2020	13.6	4.1

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0245	1.4	0.4	16	0236	3.6	1.1
Su	0921	14.9	4.5	M	0905	13.7	4.2
	1524	2.6	0.8		1526	3.8	1.2
	2129	14.3	4.4		2130	12.4	3.8
2	0340	1.2	0.4	17	0322	3.4	1.0
M	1003	16.1	4.9	Tu	0942	14.7	4.5
	1617	0.8	0.2		1605	2.2	0.7
	2227	15.0	4.6		2219	13.1	4.0
3	0427	1.1	0.3	18	0403	3.2	1.0
Tu	1043	17.1	5.2	W	1017	15.7	4.8
	1702	-0.8	-0.2		1643	0.7	0.2
	2315	15.5	4.7		2304	13.8	4.2
4	0506	1.3	0.4	19	0442	3.1	0.9
W	1120	17.8	5.4	Th	1051	16.6	5.1
	1742	-1.8	-0.5		1723	-0.7	-0.2
					2346	14.4	4.4
5	0001	15.7	4.8	20	0521	3.0	0.9
Th	0545	1.7	0.5	F	1126	17.4	5.3
	1157	18.0	5.5		1800	-1.8	-0.5
	1824	-2.3	-0.7				
6	0043	15.6	4.8	21	0027	14.8	4.5
F	0622	2.2	0.7	Sa	0600	3.1	0.9
	1232	17.8	5.4		1205	17.9	5.5
	1901	-2.3	-0.7		1840	-2.4	-0.7
7	0124	15.1	4.6	22	0109	14.9	4.5
Sa	0659	3.0	0.9	Su	0640	3.3	1.0
	1307	17.3	5.3		1244	18.0	5.5
	1940	-1.8	-0.5		1922	-2.7	-0.8
8	0206	14.5	4.4	23	0155	14.8	4.5
Su	0736	3.8	1.2	M	0724	3.6	1.1
	1342	16.5	5.0		1326	17.9	5.5
	2019	-1.0	-0.3		2008	-2.4	-0.7
9	0246	13.7	4.2	24	0243	14.5	4.4
M	0811	4.7	1.4	Tu	0809	4.1	1.2
	1417	15.5	4.7		1413	17.3	5.3
	2059	0.0	0.0		2059	-1.8	-0.5
10	0331	12.8	3.9	25	0336	14.1	4.3
Tu	0853	5.6	1.7	W	0904	4.6	1.4
	1459	14.4	4.4		1507	16.3	5.0
	2144	1.1	0.3		2152	-0.8	-0.2
11	0423	12.1	3.7	26	0434	13.8	4.2
W	0939	6.4	2.0	Th	1008	5.1	1.6
	1544	13.3	4.1		1606	15.1	4.6
	2237	2.2	0.7		2250	0.3	0.1
12	0522	11.6	3.5	27	0537	13.8	4.2
Th	1042	7.0	2.1	F	1122	5.2	1.6
	1640	12.3	3.7		1717	13.9	4.2
	2338	3.0	0.9		2354	1.3	0.4
13	0628	11.6	3.5	28	0643	14.1	4.3
F	1206	7.1	2.2	Sa	1243	4.6	1.4
	1759	11.5	3.5		1838	13.1	4.0
14	0042	3.5	1.1	29	0103	2.2	0.7
Sa	0730	12.0	3.7	Su	0743	14.7	4.5
	1329	6.5	2.0		1400	3.5	1.1
	1922	11.4	3.5		2000	12.9	3.9
15	0147	3.6	1.1	30	0207	2.7	0.8
Su	0823	12.8	3.9	M	0839	15.5	4.7
	1435	5.2	1.6		1503	2.0	0.6
	2033	11.7	3.6		2113	13.1	4.0

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0303	3.1	0.9	16	0220	4.8	1.5
Tu	0927	16.2	4.9	W	0841	14.7	4.5
	1559	0.6	0.2		1526	2.3	0.7
	2214	13.6	4.1		2148	11.9	3.6
2	0354	3.4	1.0	17	0315	4.8	1.5
W	1012	16.8	5.1	Th	0929	15.5	4.7
	1646	-0.5	-0.2		1615	0.7	0.2
	2307	14.0	4.3		2243	12.8	3.9
3	0442	3.6	1.1	18	0406	4.6	1.4
Th	1054	17.2	5.2	F	1015	16.5	5.0
	1730	-1.3	-0.4		1701	-0.8	-0.2
	2355	14.3	4.4		2333	13.7	4.2
4	0524	3.8	1.2	19	0456	4.3	1.3
F	1133	17.3	5.3	Sa	1059	17.4	5.3
	1809	-1.7	-0.5		1745	-2.0	-0.6
5	0034	14.5	4.4	20	0018	14.4	4.4
Sa	0603	4.0	1.2	Su	0542	3.9	1.2
	1213	17.2	5.2		1147	18.1	5.5
	1847	-1.8	-0.5		1829	-2.9	-0.9
6	0116	14.4	4.4	21	0104	15.0	4.6
Su	0642	4.3	1.3	M	0630	3.6	1.1
	1249	16.9	5.2		1232	18.5	5.6
	1926	-1.5	-0.5		1915	-3.3	-1.0
7	0155	14.2	4.3	22	0149	15.4	4.7
M	0721	4.6	1.4	Tu	0716	3.4	1.0
	1324	16.4	5.0		1321	18.5	5.6
	2002	-1.0	-0.3		2001	-3.2	-1.0
8	0232	13.9	4.2	23	0235	15.5	4.7
Tu	0758	5.0	1.5	W	0808	3.3	1.0
	1401	15.7	4.8		1409	18.0	5.5
	2040	-0.3	-0.1		2047	-2.6	-0.8
9	0312	13.5	4.1	24	0322	15.6	4.8
W	0838	5.4	1.6	Th	0902	3.3	1.0
	1440	14.9	4.5		1502	17.0	5.2
	2120	0.5	0.2		2136	-1.6	-0.5
10	0354	13.1	4.0	25	0412	15.5	4.7
Th	0920	5.8	1.8	F	0957	3.4	1.0
	1520	14.0	4.3		1557	15.6	4.8
	2200	1.4	0.4		2224	-0.2	-0.1
11	0439	12.9	3.9	26	0503	15.4	4.7
F	1010	6.1	1.9	Sa	1103	3.5	1.1
	1607	13.0	4.0		1701	14.1	4.3
	2242	2.3	0.7		2319	1.4	0.4
12	0525	12.8	3.9	27	0557	15.3	4.7
Sa	1110	6.2	1.9	Su	1215	3.3	1.0
	1703	12.0	3.7		1812	12.8	3.9
	2332	3.2	1.0				
13	0614	12.9	3.9	28	0015	2.9	0.9
Su	1219	5.8	1.8	M	0655	15.2	4.6
	1812	11.3	3.4		1328	2.8	0.9
					1933	11.9	3.6
14	0024	3.9	1.2	29	0120	4.1	1.2
M	0703	13.3	4.1	Tu	0756	15.3	4.7
	1328	5.0	1.5		1439	2.0	0.6
	1928	11.0	3.4		2055	11.8	3.6
15	0123	4.5	1.4	30	0226	4.9	1.5
Tu	0752	13.9	4.2	W	0852	15.5	4.7
	1431	3.7	1.1		1542	1.0	0.3
	2044	11.3	3.4		2206	12.2	3.7
				31	0329	5.3	1.6
				Th	0948	15.7	4.8
					1635	0.2	0.1
					2302	12.7	3.9

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0159	17.0	5.2	16	0211	15.2	4.6
Th	0732	2.4	0.7	F	0742	3.8	1.2
	1334	19.9	6.1		1342	17.0	5.2
	2011	-4.3	-1.3		2012	-1.6	-0.5
2	0244	17.3	5.3	17	0240	15.4	4.7
F	0822	2.2	0.7	Sa	0817	3.5	1.1
	1423	19.3	5.9		1415	16.7	5.1
	2057	-3.5	-1.1		2044	-1.2	-0.4
3	0330	17.3	5.3	18	0310	15.6	4.8
Sa	0912	2.2	0.7	Su	0853	3.3	1.0
	1515	18.2	5.5		1450	16.2	4.9
	2141	-2.3	-0.7		2115	-0.6	-0.2
4	0416	17.1	5.2	19	0339	15.7	4.8
Su	1005	2.5	0.8	M	0929	3.2	1.0
	1608	16.6	5.1		1526	15.4	4.7
	2227	-0.6	-0.2		2147	0.3	0.1
5	0504	16.7	5.1	20	0411	15.7	4.8
M	1103	2.9	0.9	Tu	1011	3.2	1.0
	1703	14.9	4.5		1606	14.4	4.4
	2315	1.2	0.4		2222	1.4	0.4
6	0552	16.2	4.9	21	0445	15.7	4.8
Tu	1205	3.2	1.0	W	1059	3.1	0.9
	1805	13.3	4.1		1656	13.2	4.0
					2301	2.8	0.9
7	0005	3.0	0.9	22	0525	15.5	4.7
W	0645	15.6	4.8	Th	1157	3.1	0.9
	1315	3.3	1.0		1759	12.1	3.7
	1919	12.0	3.7		2353	4.2	1.3
8	0106	4.6	1.4	23	0616	15.4	4.7
Th	0741	15.2	4.6	F	1310	2.7	0.8
	1428	2.9	0.9		1921	11.3	3.4
	2042	11.5	3.5				
9	0215	5.7	1.7	24	0059	5.4	1.6
F	0839	15.0	4.6	Sa	0721	15.4	4.7
	1532	2.3	0.7		1429	1.9	0.6
	2204	11.8	3.6		2058	11.4	3.5
10	0322	6.1	1.9	25	0221	5.9	1.8
Sa	0938	15.0	4.6	Su	0832	15.7	4.8
	1628	1.4	0.4		1546	0.5	0.2
	2305	12.4	3.8		2223	12.4	3.8
11	0420	6.1	1.9	26	0341	5.6	1.7
Su	1033	15.4	4.7	M	0946	16.5	5.0
	1713	0.6	0.2		1647	-1.1	-0.3
	2353	13.1	4.0		2327	13.8	4.2
12	0510	5.7	1.7	27	0449	4.6	1.4
M	1118	15.9	4.8	Tu	1052	17.6	5.4
	1755	-0.2	-0.1		1742	-2.6	-0.8
13	0032	13.8	4.2	28	0019	15.3	4.7
Tu	0555	5.1	1.6	W	0547	3.3	1.0
	1158	16.4	5.0		1148	18.7	5.7
	1833	-0.9	-0.3		1829	-3.7	-1.1
14	0107	14.4	4.4	29	0102	16.5	5.0
W	0632	4.6	1.4	Th	0636	2.1	0.6
	1235	16.8	5.1		1240	19.5	5.9
	1909	-1.3	-0.4		1913	-4.3	-1.3
15	0139	14.8	4.5	30	0144	17.5	5.3
Th	0707	4.1	1.2	F	0723	1.1	0.3
	1310	17.0	5.2		1329	19.6	6.0
	1940	-1.6	-0.5		1955	-4.2	-1.3
				31	0223	18.1	5.5
				Sa	0811	0.4	0.1
					1415	19.1	5.8
					2036	-3.5	-1.1

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0302	18.3	5.6	16	0233	16.8	5.1
Su	0857	0.2	0.1	M	0831	1.0	0.3
	1500	18.1	5.5		1433	16.5	5.0
	2115	-2.2	-0.7		2046	-0.8	-0.2
2	0342	18.0	5.5	17	0300	16.9	5.2
M	0942	0.5	0.2	Tu	0905	0.7	0.2
	1545	16.5	5.0		1509	15.7	4.8
	2153	-0.5	-0.2		2115	0.2	0.1
3	0419	17.3	5.3	18	0329	16.9	5.2
Tu	1030	1.1	0.3	W	0945	0.7	0.2
	1632	14.8	4.5		1547	14.7	4.5
	2230	1.5	0.5		2147	1.4	0.4
4	0458	16.4	5.0	19	0401	16.6	5.1
W	1120	1.9	0.6	Th	1030	1.0	0.3
	1725	13.0	4.0		1635	13.4	4.1
	2312	3.5	1.1		2226	2.9	0.9
5	0544	15.3	4.7	20	0443	16.1	4.9
Th	1219	2.7	0.8	F	1123	1.5	0.5
	1828	11.4	3.5		1735	12.0	3.7
					2314	4.5	1.4
6	0002	5.3	1.6	21	0533	15.4	4.7
F	0634	14.3	4.4	Sa	1234	1.9	0.6
	1331	3.2	1.0		1901	10.9	3.3
	1954	10.5	3.2				
7	0111	6.6	2.0	22	0023	5.9	1.8
Sa	0742	13.5	4.1	Su	0645	14.8	4.5
	1453	3.1	0.9		1405	1.8	0.5
	2139	10.6	3.2		2051	11.0	3.4
8	0245	7.2	2.2	23	0203	6.5	2.0
Su	0901	13.4	4.1	M	0813	14.7	4.5
	1602	2.4	0.7		1530	0.7	0.2
	2255	11.4	3.5		2220	12.2	3.7
9	0400	6.8	2.1	24	0338	5.7	1.7
M	1009	14.0	4.3	Tu	0941	15.5	4.7
	1655	1.3	0.4		1636	-0.7	-0.2
	2341	12.4	3.8		2316	13.9	4.2
10	0457	5.9	1.8	25	0447	4.2	1.3
Tu	1102	14.8	4.5	W	1049	16.8	5.1
	1737	0.3	0.1		1729	-2.1	-0.6
11	0017	13.4	4.1	26	0003	15.6	4.8
W	0539	4.9	1.5	Th	0539	2.3	0.7
	1145	15.7	4.8		1145	18.0	5.5
	1814	-0.6	-0.2		1815	-3.1	-0.9
12	0048	14.4	4.4	27	0043	17.0	5.2
Th	0617	3.9	1.2	F	0628	0.7	0.2
	1222	16.4	5.0		1235	18.7	5.7
	1846	-1.3	-0.4		1854	-3.5	-1.1
13	0117	15.2	4.6	28	0120	18.1	5.5
F	0652	2.9	0.9	Sa	0712	-0.6	-0.2
	1256	16.9	5.2		1320	18.9	5.8
	1917	-1.8	-0.5		1933	-3.3	-1.0
14	0142	15.9	4.8				
Sa	0724	2.1	0.6				
	1328	17.1	5.2				
	1946	-1.8	-0.5				
15	0207	16.4	5.0				
Su	0757	1.5	0.5				
	1400	17.0	5.2				
	2015	-1.5	-0.5				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0154	18.7	5.7	16	0128	17.3	5.3
Su	0752	-1.3	-0.4	M	0733	-0.6	-0.2
	1401	18.5	5.6		1342	16.9	5.2
	2009	-2.5	-0.8		1945	-0.9	-0.3
2	0229	18.7	5.7	17	0154	17.7	5.4
M	0831	-1.5	-0.5	Tu	0808	-1.2	-0.4
	1443	17.5	5.3		1417	16.5	5.0
	2044	-1.2	-0.4		2017	-0.2	-0.1
3	0302	18.3	5.6	18	0222	17.9	5.5
Tu	0913	-1.1	-0.3	W	0844	-1.5	-0.5
	1523	16.1	4.9		1454	15.8	4.8
	2118	0.4	0.1		2049	0.8	0.2
4	0337	17.4	5.3	19	0254	17.7	5.4
W	0952	-0.3	-0.1	Th	0923	-1.2	-0.4
	1606	14.5	4.4		1537	14.7	4.5
	2153	2.2	0.7		2125	2.1	0.6
5	0409	16.2	4.9	20	0331	17.1	5.2
Th	1037	0.8	0.2	F	1008	-0.5	-0.2
	1651	12.8	3.9		1626	13.4	4.1
	2229	4.0	1.2		2203	3.6	1.1
6	0446	14.9	4.5	21	0414	16.2	4.9
F	1128	2.1	0.6	Sa	1104	0.4	0.1
	1745	11.3	3.4		1727	12.0	3.7
	2312	5.7	1.7		2259	5.1	1.6
7	0533	13.6	4.1	22	0512	15.1	4.6
Sa	1234	3.2	1.0	Su	1216	1.4	0.4
	1908	10.2	3.1		1859	11.2	3.4
8	0016	7.0	2.1	23	0018	6.3	1.9
Su	0642	12.6	3.8	M	0631	14.1	4.3
	1405	3.6	1.1		1351	1.6	0.5
	2103	10.1	3.1		2042	11.6	3.5
9	0206	7.6	2.3	24	0208	6.3	1.9
M	0816	12.3	3.7	Tu	0810	14.0	4.3
	1527	3.0	0.9		1514	0.9	0.3
	2225	11.0	3.4		2202	13.0	4.0
10	0338	6.9	2.1	25	0336	5.0	1.5
Tu	0943	12.9	3.9	W	0938	14.8	4.5
	1625	2.0	0.6		1617	-0.2	-0.1
	2310	12.2	3.7		2255	14.7	4.5
11	0437	5.7	1.7	26	0439	3.0	0.9
W	1039	14.0	4.3	Th	1044	16.0	4.9
	1708	0.9	0.3		1708	-1.2	-0.4
	2344	13.5	4.1		2337	16.3	5.0
12	0518	4.3	1.3	27	0529	1.1	0.3
Th	1122	15.0	4.6	F	1137	17.0	5.2
	1745	-0.1	0.0		1750	-1.8	-0.5
13	0011	14.6	4.5	28	0014	17.6	5.4
F	0553	2.9	0.9	Sa	0613	-0.6	-0.2
	1201	15.9	4.8		1224	17.6	5.4
	1817	-0.8	-0.2		1830	-1.9	-0.6
14	0038	15.7	4.8	29	0049	18.4	5.6
Sa	0628	1.5	0.5	Su	0652	-1.8	-0.5
	1236	16.6	5.1		1305	17.7	5.4
	1846	-1.2	-0.4		1904	-1.5	-0.5
15	0103	16.6	5.1	30	0122	18.8	5.7
Su	0700	0.3	0.1	M	0730	-2.4	-0.7
	1308	16.9	5.2		1345	17.4	5.3
	1915	-1.2	-0.4		1939	-0.7	-0.2
				31	0154	18.6	5.7
				Tu	0806	-2.5	-0.8
					1422	16.6	5.1
					2014	0.5	0.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0224	18.0	5.5	16	0151	18.5	5.6
W	0844	-2.0	-0.6	Th	0824	-2.9	-0.9
	1502	15.5	4.7		1446	15.6	4.8
	2046	1.8	0.5		2028	1.9	0.6
2	0256	17.0	5.2	17	0229	18.1	5.5
Th	0921	-1.0	-0.3	F	0907	-2.5	-0.8
	1541	14.2	4.3		1529	14.7	4.5
	2121	3.2	1.0		2108	3.0	0.9
3	0328	15.9	4.8	18	0313	17.3	5.3
F	1001	0.2	0.1	Sa	0955	-1.5	-0.5
	1624	12.8	3.9		1627	13.6	4.1
	2153	4.7	1.4		2158	4.3	1.3
4	0403	14.6	4.5	19	0401	16.2	4.9
Sa	1046	1.6	0.5	Su	1053	-0.3	-0.1
	1715	11.5	3.5		1736	12.6	3.8
	2235	6.0	1.8		2301	5.4	1.6
5	0446	13.3	4.1	20	0507	14.9	4.5
Su	1149	2.8	0.9	M	1207	0.8	0.2
	1829	10.5	3.2		1857	12.3	3.7
	2336	7.1	2.2				
6	0553	12.3	3.7	21	0029	6.0	1.8
M	1311	3.5	1.1	Tu	0629	13.9	4.2
	2011	10.4	3.2		1331	1.3	0.4
					2021	12.9	3.9
7	0126	7.5	2.3	22	0208	5.4	1.6
Tu	0729	11.8	3.6	W	0805	13.6	4.1
	1434	3.3	1.0		1447	1.1	0.3
	2132	11.2	3.4		2127	14.2	4.3
8	0303	6.7	2.0	23	0324	3.8	1.2
W	0859	12.2	3.7	Th	0927	14.2	4.3
	1535	2.6	0.8		1548	0.7	0.2
	2220	12.4	3.8		2220	15.5	4.7
9	0403	5.3	1.6	24	0423	1.9	0.6
Th	1002	13.2	4.0	F	1031	15.0	4.6
	1625	1.7	0.5		1639	0.3	0.1
	2254	13.7	4.2		2302	16.8	5.1
10	0447	3.6	1.1	25	0510	0.1	0.0
F	1052	14.2	4.3	Sa	1124	15.7	4.8
	1702	0.9	0.3		1721	0.2	0.1
	2322	15.0	4.6		2339	17.7	5.4
11	0522	1.9	0.6	26	0553	-1.3	-0.4
Sa	1132	15.1	4.6	Su	1209	16.2	4.9
	1734	0.4	0.1		1759	0.4	0.1
	2350	16.2	4.9				
12	0558	0.3	0.1	27	0015	18.2	5.5
Su	1209	15.9	4.8	M	0633	-2.3	-0.7
	1809	0.1	0.0		1251	16.3	5.0
					1838	0.8	0.2
13	0020	17.2	5.2	28	0048	18.2	5.5
M	0633	-1.1	-0.3	Tu	0708	-2.7	-0.8
	1247	16.4	5.0		1330	16.1	4.9
	1841	0.1	0.0		1911	1.5	0.5
14	0047	18.0	5.5	29	0120	17.9	5.5
Tu	0708	-2.2	-0.7	W	0743	-2.6	-0.8
	1324	16.5	5.0		1407	15.6	4.8
	1915	0.4	0.1		1945	2.3	0.7
15	0119	18.4	5.6	30	0151	17.4	5.3
W	0743	-2.9	-0.9	Th	0819	-2.1	-0.6
	1401	16.3	5.0		1445	14.8	4.5
	1948	1.0	0.3		2020	3.2	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0223	16.5	5.0	16	0215	18.4	5.6
F	0857	-1.2	-0.4	Sa	0857	-3.3	-1.0
	1523	13.9	4.2		1531	15.0	4.6
	2052	4.2	1.3		2102	3.4	1.0
2	0257	15.6	4.8	17	0304	17.5	5.3
Sa	0936	-0.1	0.0	Su	0950	-2.3	-0.7
	1606	12.9	3.9		1627	14.4	4.4
	2131	5.2	1.6		2158	4.2	1.3
3	0334	14.5	4.4	18	0401	16.3	5.0
Su	1021	1.0	0.3	M	1046	-1.1	-0.3
	1656	12.0	3.7		1731	14.0	4.3
	2216	6.1	1.9		2307	4.7	1.4
4	0418	13.5	4.1	19	0507	15.0	4.6
M	1112	2.1	0.6	Tu	1152	0.1	0.0
	1800	11.5	3.5		1839	14.0	4.3
	2320	6.8	2.1				
5	0517	12.5	3.8	20	0028	4.8	1.5
Tu	1216	2.8	0.9	W	0623	13.9	4.2
	1909	11.4	3.5		1300	1.0	0.3
					1946	14.5	4.4
6	0045	6.9	2.1	21	0149	4.0	1.2
W	0637	11.8	3.6	Th	0749	13.3	4.1
	1327	3.1	0.9		1408	1.6	0.5
	2018	12.0	3.7		2046	15.2	4.6
7	0210	6.2	1.9	22	0303	2.6	0.8
Th	0800	11.8	3.6	F	0906	13.3	4.1
	1429	3.0	0.9		1511	2.0	0.6
	2107	12.9	3.9		2138	16.0	4.9
8	0314	4.8	1.5	23	0400	1.1	0.3
F	0912	12.3	3.7	Sa	1012	13.7	4.2
	1524	2.7	0.8		1603	2.2	0.7
	2148	14.1	4.3		2223	16.7	5.1
9	0404	3.0	0.9	24	0449	-0.3	-0.1
Sa	1009	13.2	4.0	Su	1108	14.2	4.3
	1609	2.3	0.7		1649	2.5	0.8
	2225	15.3	4.7		2305	17.2	5.2
10	0447	1.2	0.4	25	0532	-1.3	-0.4
Su	1057	14.1	4.3	M	1155	14.6	4.5
	1649	2.0	0.6		1732	2.7	0.8
	2300	16.5	5.0		2342	17.4	5.3
11	0527	-0.6	-0.2	26	0611	-2.0	-0.6
M	1143	14.9	4.5	Tu	1237	14.8	4.5
	1730	1.8	0.5		1812	3.0	0.9
	2334	17.5	5.3				
12	0604	-2.1	-0.6	27	0017	17.3	5.3
Tu	1225	15.5	4.7	W	0648	-2.2	-0.7
	1809	1.7	0.5		1319	14.8	4.5
					1848	3.3	1.0
13	0011	18.3	5.6	28	0053	17.1	5.2
W	0645	-3.2	-1.0	Th	0724	-2.2	-0.7
	1309	15.9	4.8		1356	14.6	4.5
	1848	1.8	0.5		1923	3.7	1.1
14	0048	18.8	5.7	29	0125	16.7	5.1
Th	0727	-3.8	-1.2	F	0800	-1.8	-0.5
	1354	15.9	4.8		1434	14.3	4.4
	1931	2.2	0.7		2001	4.1	1.2
15	0130	18.8	5.7	30	0201	16.2	4.9
F	0809	-3.8	-1.2	Sa	0838	-1.3	-0.4
	1441	15.5	4.7		1513	13.8	4.2
	2015	2.7	0.8		2038	4.6	1.4
				31	0236	15.6	4.8
				Su	0916	-0.6	-0.2
					1553	13.4	4.1
					2118	5.1	1.6

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0315	14.8	4.5	16	0357	16.7	5.1
M	0958	0.2	0.1	Tu	1030	-1.8	-0.5
	1635	13.0	4.0		1709	15.6	4.8
	2203	5.6	1.7		2259	3.2	1.0
2	0358	13.9	4.2	17	0459	15.2	4.6
Tu	1042	1.1	0.3	W	1125	-0.3	-0.1
	1723	12.7	3.9		1805	15.5	4.7
	2256	5.9	1.8				
3	0448	13.0	4.0	18	0008	3.2	1.0
W	1131	1.9	0.6	Th	0605	13.8	4.2
	1812	12.8	3.9		1223	1.2	0.4
					1902	15.5	4.7
4	0001	5.9	1.8	19	0121	2.8	0.9
Th	0551	12.2	3.7	F	0720	12.8	3.9
	1224	2.7	0.8		1322	2.5	0.8
	1901	13.1	4.0		2000	15.6	4.8
5	0114	5.3	1.6	20	0229	2.0	0.6
F	0701	11.7	3.6	Sa	0839	12.3	3.7
	1319	3.2	1.0		1425	3.5	1.1
	1952	13.7	4.2		2053	15.8	4.8
6	0219	4.1	1.2	21	0332	1.1	0.3
Sa	0816	11.7	3.6	Su	0951	12.4	3.8
	1418	3.5	1.1		1525	4.1	1.2
	2039	14.5	4.4		2146	15.9	4.8
7	0317	2.6	0.8	22	0425	0.1	0.0
Su	0924	12.2	3.7	M	1054	12.8	3.9
	1511	3.6	1.1		1620	4.4	1.3
	2125	15.5	4.7		2233	16.1	4.9
8	0409	0.8	0.2	23	0513	-0.6	-0.2
M	1025	13.0	4.0	Tu	1146	13.3	4.1
	1604	3.5	1.1		1708	4.4	1.3
	2209	16.5	5.0		2318	16.2	4.9
9	0455	-0.9	-0.3	24	0555	-1.2	-0.4
Tu	1118	13.8	4.2	W	1230	13.7	4.2
	1654	3.3	1.0		1753	4.4	1.3
	2257	17.5	5.3		2357	16.4	5.0
10	0542	-2.4	-0.7	25	0633	-1.6	-0.5
W	1211	14.7	4.5	Th	1309	14.0	4.3
	1743	3.0	0.9		1832	4.3	1.3
	2342	18.3	5.6				
11	0627	-3.6	-1.1	26	0035	16.4	5.0
Th	1259	15.3	4.7	F	0710	-1.7	-0.5
	1830	2.8	0.9		1345	14.2	4.3
					1910	4.2	1.3
12	0029	18.9	5.8	27	0111	16.4	5.0
F	0712	-4.2	-1.3	Sa	0746	-1.7	-0.5
	1347	15.7	4.8		1422	14.3	4.4
	1918	2.6	0.8		1946	4.1	1.2
13	0117	19.0	5.8	28	0148	16.2	4.9
Sa	0801	-4.3	-1.3	Su	0821	-1.5	-0.5
	1436	15.8	4.8		1454	14.2	4.3
	2007	2.6	0.8		2024	4.2	1.3
14	0208	18.7	5.7	29	0223	15.8	4.8
Su	0849	-3.9	-1.2	M	0856	-1.1	-0.3
	1526	15.8	4.8		1529	14.2	4.3
	2100	2.8	0.9		2102	4.3	1.3
15	0301	17.9	5.5	30	0259	15.2	4.6
M	0939	-3.0	-0.9	Tu	0931	-0.5	-0.2
	1616	15.7	4.8		1603	14.1	4.3
	2155	3.0	0.9		2142	4.4	1.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0337	14.5	4.4	16	0438	15.3	4.7
W	1008	0.3	0.1	Th	1049	-0.1	0.0
	1638	14.1	4.3		1723	16.5	5.0
	2227	4.4	1.3		2336	1.8	0.5
2	0419	13.6	4.1	17	0539	13.6	4.1
Th	1045	1.2	0.4	F	1138	1.8	0.5
	1717	14.1	4.3		1813	15.9	4.8
	2317	4.3	1.3				
3	0509	12.6	3.8	18	0041	2.0	0.6
F	1125	2.3	0.7	Sa	0649	12.2	3.7
	1759	14.2	4.3		1237	3.6	1.1
					1908	15.3	4.7
4	0018	4.0	1.2	19	0151	2.0	0.6
Sa	0610	11.8	3.6	Su	0808	11.4	3.5
	1216	3.4	1.0		1340	4.9	1.5
	1845	14.4	4.4		2008	14.8	4.5
5	0123	3.3	1.0	20	0301	1.7	0.5
Su	0724	11.3	3.4	M	0935	11.3	3.4
	1315	4.2	1.3		1451	5.7	1.7
	1936	14.8	4.5		2110	14.7	4.5
6	0232	2.2	0.7	21	0404	1.0	0.3
M	0842	11.3	3.4	Tu	1041	11.8	3.6
	1421	4.8	1.5		1559	5.7	1.7
	2034	15.4	4.7		2209	14.8	4.5
7	0335	0.8	0.2	22	0454	0.3	0.1
Tu	1000	12.0	3.7	W	1137	12.5	3.8
	1527	4.8	1.5		1654	5.4	1.6
	2132	16.2	4.9		2301	15.2	4.6
8	0433	-0.8	-0.2	23	0539	-0.4	-0.1
W	1105	13.0	4.0	Th	1219	13.2	4.0
	1629	4.4	1.3		1739	4.9	1.5
	2231	17.2	5.2		2343	15.7	4.8
9	0526	-2.3	-0.7	24	0619	-1.0	-0.3
Th	1158	14.1	4.3	F	1256	13.9	4.2
	1724	3.7	1.1		1819	4.3	1.3
	2327	18.1	5.5				
10	0615	-3.6	-1.1	25	0025	16.2	4.9
F	1251	15.2	4.6	Sa	0655	-1.5	-0.5
	1818	2.9	0.9		1328	14.4	4.4
					1856	3.7	1.1
11	0019	18.9	5.8	26	0058	16.4	5.0
Sa	0702	-4.4	-1.3	Su	0727	-1.8	-0.5
	1336	16.0	4.9		1358	14.8	4.5
	1909	2.1	0.6		1932	3.3	1.0
12	0111	19.2	5.9	27	0133	16.5	5.0
Su	0750	-4.6	-1.4	M	0759	-1.8	-0.5
	1421	16.7	5.1		1427	15.1	4.6
	1958	1.6	0.5		2004	2.9	0.9
13	0203	19.0	5.8	28	0206	16.3	5.0
M	0833	-4.3	-1.3	Tu	0830	-1.5	-0.5
	1507	17.0	5.2		1455	15.3	4.7
	2049	1.3	0.4		2040	2.7	0.8
14	0252	18.2	5.5	29	0238	15.8	4.8
Tu	0918	-3.3	-1.0	W	0900	-0.8	-0.2
	1550	17.1	5.2		1524	15.4	4.7
	2141	1.2	0.4		2115	2.6	0.8
15	0345	16.9	5.2	30	0315	15.0	4.6
W	1003	-1.8	-0.5	Th	0931	0.0	0.0
	1635	16.9	5.2		1553	15.4	4.7
	2237	1.5	0.5		2153	2.6	0.8
				31	0353	14.1	4.3
				F	1003	1.1	0.3
					1624	15.3	4.7
					2238	2.6	0.8

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0435	13.0	4.0	16	0612	11.8	3.6
Sa	1040	2.4	0.7	Su	1147	4.8	1.5
	1701	15.1	4.6		1813	14.5	4.4
	2331	2.6	0.8				
2	0531	11.9	3.6	17	0107	2.4	0.7
Su	1123	3.7	1.1	M	0734	10.8	3.3
	1746	14.9	4.5		1253	6.2	1.9
					1923	13.6	4.1
3	0034	2.5	0.8	18	0229	2.6	0.8
M	0645	11.0	3.4	Tu	0912	10.7	3.3
	1222	5.0	1.5		1426	6.8	2.1
	1843	14.8	4.5		2039	13.4	4.1
4	0153	2.1	0.6	19	0340	2.1	0.6
Tu	0816	10.8	3.3	W	1031	11.5	3.5
	1339	5.8	1.8		1545	6.5	2.0
	1954	14.9	4.5		2154	13.8	4.2
5	0309	1.0	0.3	20	0436	1.2	0.4
W	0949	11.5	3.5	Th	1121	12.4	3.8
	1504	5.7	1.7		1641	5.7	1.7
	2111	15.6	4.8		2249	14.6	4.5
6	0417	-0.5	-0.2	21	0521	0.3	0.1
Th	1054	12.8	3.9	F	1159	13.4	4.1
	1617	4.8	1.5		1726	4.7	1.4
	2220	16.7	5.1		2332	15.4	4.7
7	0513	-2.1	-0.6	22	0558	-0.5	-0.2
F	1150	14.3	4.4	Sa	1232	14.3	4.4
	1716	3.5	1.1		1803	3.6	1.1
	2321	17.9	5.5				
8	0603	-3.4	-1.0	23	0007	16.1	4.9
Sa	1235	15.7	4.8	Su	0630	-1.1	-0.3
	1809	2.1	0.6		1259	15.1	4.6
					1836	2.7	0.8
9	0014	18.9	5.8	24	0042	16.6	5.1
Su	0648	-4.2	-1.3	M	0701	-1.5	-0.5
	1317	17.0	5.2		1325	15.7	4.8
	1859	0.8	0.2		1910	1.9	0.6
10	0103	19.3	5.9	25	0114	16.8	5.1
M	0731	-4.3	-1.3	Tu	0729	-1.5	-0.5
	1358	17.8	5.4		1351	16.2	4.9
	1945	-0.1	0.0		1942	1.3	0.4
11	0152	19.1	5.8	26	0146	16.6	5.1
Tu	0812	-3.8	-1.2	W	0758	-1.1	-0.3
	1438	18.3	5.6		1415	16.6	5.1
	2031	-0.6	-0.2		2015	0.8	0.2
12	0238	18.3	5.6	27	0218	16.2	4.9
W	0852	-2.7	-0.8	Th	0827	-0.4	-0.1
	1516	18.2	5.5		1441	16.7	5.1
	2118	-0.6	-0.2		2046	0.6	0.2
13	0326	16.9	5.2	28	0251	15.5	4.7
Th	0931	-1.1	-0.3	F	0855	0.5	0.2
	1555	17.7	5.4		1508	16.6	5.1
	2206	-0.1	0.0		2122	0.7	0.2
14	0414	15.2	4.6	29	0329	14.5	4.4
F	1011	0.9	0.3	Sa	0927	1.7	0.5
	1638	16.8	5.1		1537	16.3	5.0
	2259	0.8	0.2		2204	1.0	0.3
15	0507	13.4	4.1	30	0411	13.3	4.1
Sa	1055	2.9	0.9	Su	1003	3.1	0.9
	1723	15.7	4.8		1616	15.8	4.8
	2356	1.7	0.5		2253	1.5	0.5
				31	0504	12.1	3.7
				M	1046	4.5	1.4
					1701	15.2	4.6

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0000	2.0	0.6	16	0147	3.4	1.0
Tu	0623	11.0	3.4	W	0848	10.8	3.3
	1150	5.9	1.8		1401	7.6	2.3
	1808	14.6	4.5		2009	12.5	3.8
2	0124	2.1	0.6	17	0311	3.0	0.9
W	0807	10.8	3.3	Th	1004	11.7	3.6
	1323	6.6	2.0		1527	6.8	2.1
	1933	14.4	4.4		2128	13.2	4.0
3	0255	1.3	0.4	18	0409	2.1	0.6
Th	0943	11.9	3.6	F	1052	12.8	3.9
	1503	6.0	1.8		1625	5.6	1.7
	2104	15.1	4.6		2225	14.2	4.3
4	0405	-0.1	0.0	19	0452	1.2	0.4
F	1045	13.5	4.1	Sa	1124	13.9	4.2
	1615	4.5	1.4		1703	4.2	1.3
	2217	16.4	5.0		2309	15.1	4.6
5	0458	-1.5	-0.5	20	0526	0.4	0.1
Sa	1131	15.3	4.7	Su	1153	15.0	4.6
	1710	2.6	0.8		1739	2.8	0.9
	2316	17.7	5.4		2345	16.0	4.9
6	0545	-2.6	-0.8	21	0557	-0.2	-0.1
Su	1213	16.9	5.2	M	1219	16.0	4.9
	1758	0.8	0.2		1812	1.6	0.5
7	0006	18.6	5.7	22	0020	16.5	5.0
M	0627	-3.2	-1.0	Tu	0627	-0.5	-0.2
	1251	18.1	5.5		1243	16.8	5.1
	1844	-0.8	-0.2		1844	0.5	0.2
8	0054	19.0	5.8	23	0053	16.8	5.1
Tu	0706	-3.1	-0.9	W	0657	-0.4	-0.1
	1327	18.9	5.8		1308	17.4	5.3
	1928	-1.8	-0.5		1914	-0.3	-0.1
9	0137	18.8	5.7	24	0125	16.8	5.1
W	0745	-2.4	-0.7	Th	0726	-0.1	0.0
	1402	19.2	5.9		1333	17.7	5.4
	2009	-2.1	-0.6		1948	-0.9	-0.3
10	0222	17.9	5.5	25	0157	16.4	5.0
Th	0820	-1.2	-0.4	F	0754	0.6	0.2
	1438	18.8	5.7		1359	17.8	5.4
	2050	-1.8	-0.5		2020	-1.0	-0.3
11	0305	16.6	5.1	26	0233	15.8	4.8
F	0858	0.4	0.1	Sa	0826	1.6	0.5
	1513	18.0	5.5		1430	17.6	5.4
	2134	-1.0	-0.3		2057	-0.8	-0.2
12	0350	15.0	4.6	27	0312	14.8	4.5
Sa	0934	2.3	0.7	Su	0859	2.8	0.9
	1550	16.7	5.1		1502	17.1	5.2
	2218	0.3	0.1		2141	-0.2	-0.1
13	0437	13.3	4.1	28	0358	13.6	4.1
Su	1014	4.1	1.2	M	0937	4.1	1.2
	1631	15.3	4.7		1545	16.4	5.0
	2312	1.7	0.5		2230	0.8	0.2
14	0538	11.8	3.6	29	0459	12.4	3.8
M	1101	5.8	1.8	Tu	1027	5.5	1.7
	1723	13.9	4.2		1634	15.3	4.7
					2340	1.7	0.5
15	0018	2.9	0.9	30	0621	11.5	3.5
Tu	0701	10.8	3.3	W	1141	6.7	2.0
	1213	7.2	2.2		1752	14.4	4.4
	1833	12.8	3.9				

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

JUNEAU, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0108	2.1	0.6	16	0218	3.6	1.1
Th	0805	11.8	3.6	F	0914	12.1	3.7
	1328	6.9	2.1		1453	7.0	2.1
	1930	14.1	4.3		2050	12.6	3.8
2	0237	1.6	0.5	17	0319	3.1	0.9
F	0924	13.1	4.0	Sa	1000	13.3	4.1
	1503	5.6	1.7		1551	5.5	1.7
	2101	14.8	4.5		2151	13.5	4.1
3	0343	0.5	0.2	18	0404	2.4	0.7
Sa	1020	14.8	4.5	Su	1036	14.4	4.4
	1609	3.6	1.1		1633	3.9	1.2
	2209	16.0	4.9		2237	14.5	4.4
4	0436	-0.5	-0.2	19	0444	1.7	0.5
Su	1105	16.5	5.0	M	1105	15.6	4.8
	1700	1.5	0.5		1709	2.3	0.7
	2308	17.1	5.2		2318	15.3	4.7
5	0521	-1.1	-0.3	20	0518	1.3	0.4
M	1142	18.0	5.5	Tu	1132	16.7	5.1
	1745	-0.5	-0.2		1742	0.8	0.2
	2355	17.9	5.5		2354	16.0	4.9
6	0603	-1.3	-0.4	21	0549	1.1	0.3
Tu	1219	19.0	5.8	W	1158	17.6	5.4
	1827	-1.9	-0.6		1815	-0.5	-0.2
7	0040	18.2	5.5	22	0030	16.4	5.0
W	0640	-1.0	-0.3	Th	0621	1.2	0.4
	1254	19.5	5.9		1227	18.2	5.5
	1907	-2.7	-0.8		1848	-1.5	-0.5
8	0123	18.0	5.5	23	0105	16.6	5.1
Th	0715	-0.3	-0.1	F	0653	1.4	0.4
	1328	19.5	5.9		1255	18.6	5.7
	1946	-2.8	-0.9		1923	-2.1	-0.6
9	0203	17.3	5.3	24	0143	16.4	5.0
F	0751	0.9	0.3	Sa	0727	2.0	0.6
	1401	18.9	5.8		1327	18.7	5.7
	2024	-2.3	-0.7		2001	-2.2	-0.7
10	0244	16.2	4.9	25	0222	15.9	4.8
Sa	0826	2.2	0.7	Su	0802	2.8	0.9
	1435	17.9	5.5		1403	18.4	5.6
	2103	-1.3	-0.4		2041	-1.8	-0.5
11	0326	14.9	4.5	26	0305	15.0	4.6
Su	0902	3.7	1.1	M	0841	3.7	1.1
	1510	16.6	5.1		1441	17.8	5.4
	2145	0.1	0.0		2129	-1.0	-0.3
12	0414	13.5	4.1	27	0355	14.1	4.3
M	0942	5.2	1.6	Tu	0928	4.9	1.5
	1550	15.2	4.6		1530	16.8	5.1
	2235	1.6	0.5		2222	0.1	0.0
13	0509	12.2	3.7	28	0501	13.2	4.0
Tu	1029	6.6	2.0	W	1027	5.9	1.8
	1638	13.8	4.2		1630	15.5	4.7
	2335	2.9	0.9		2328	1.2	0.4
14	0626	11.3	3.4	29	0620	12.9	3.9
W	1138	7.6	2.3	Th	1149	6.6	2.0
	1749	12.7	3.9		1748	14.4	4.4
15	0054	3.7	1.1	30	0050	1.8	0.5
Th	0802	11.3	3.4	F	0743	13.4	4.1
	1323	7.9	2.4		1325	6.2	1.9
	1923	12.2	3.7		1922	14.0	4.3
				31	0208	1.9	0.6
				Sa	0852	14.6	4.5
					1451	4.6	1.4
					2048	14.4	4.4

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0314	1.5	0.5	16	0306	3.7	1.1
Su	0948	16.0	4.9	M	0932	14.7	4.5
	1553	2.6	0.8		1551	3.8	1.2
	2159	15.2	4.6		2156	13.3	4.1
2	0407	1.2	0.4	17	0351	3.4	1.0
M	1031	17.4	5.3	Tu	1009	15.8	4.8
	1644	0.6	0.2		1633	2.0	0.6
	2254	16.1	4.9		2247	14.2	4.3
3	0454	1.0	0.3	18	0433	3.2	1.0
Tu	1110	18.5	5.6	W	1041	16.8	5.1
	1727	-1.1	-0.3		1712	0.4	0.1
	2345	16.7	5.1		2329	15.0	4.6
4	0534	1.1	0.3	19	0510	3.0	0.9
W	1148	19.1	5.8	Th	1116	17.8	5.4
	1809	-2.2	-0.7		1750	-1.0	-0.3
5	0030	17.0	5.2	20	0009	15.6	4.8
Th	0614	1.4	0.4	F	0550	2.8	0.9
	1224	19.3	5.9		1149	18.6	5.7
	1848	-2.7	-0.8		1826	-2.1	-0.6
6	0110	16.9	5.2	21	0051	16.0	4.9
F	0651	2.0	0.6	Sa	0627	2.9	0.9
	1259	19.1	5.8		1227	19.1	5.8
	1926	-2.7	-0.8		1905	-2.8	-0.9
7	0150	16.4	5.0	22	0133	16.1	4.9
Sa	0727	2.8	0.9	Su	0707	3.1	0.9
	1332	18.5	5.6		1307	19.2	5.9
	2001	-2.1	-0.6		1947	-3.0	-0.9
8	0231	15.7	4.8	23	0216	16.0	4.9
Su	0802	3.7	1.1	M	0748	3.4	1.0
	1407	17.6	5.4		1348	19.0	5.8
	2041	-1.2	-0.4		2031	-2.7	-0.8
9	0310	14.8	4.5	24	0305	15.6	4.8
M	0839	4.7	1.4	Tu	0833	4.0	1.2
	1441	16.5	5.0		1436	18.3	5.6
	2121	0.0	0.0		2121	-1.9	-0.6
10	0355	13.8	4.2	25	0355	15.1	4.6
Tu	0918	5.7	1.7	W	0929	4.6	1.4
	1521	15.4	4.7		1528	17.3	5.3
	2206	1.2	0.4		2213	-0.8	-0.2
11	0446	12.9	3.9	26	0456	14.7	4.5
W	1006	6.7	2.0	Th	1030	5.2	1.6
	1606	14.2	4.3		1630	16.0	4.9
	2259	2.4	0.7		2312	0.4	0.1
12	0543	12.4	3.8	27	0600	14.7	4.5
Th	1107	7.4	2.3	F	1146	5.4	1.6
	1704	13.1	4.0		1743	14.7	4.5
13	0000	3.3	1.0	28	0018	1.5	0.5
F	0652	12.3	3.7	Sa	0706	15.0	4.6
	1231	7.5	2.3		1309	4.8	1.5
	1821	12.3	3.7		1906	13.8	4.2
14	0107	3.8	1.2	29	0128	2.3	0.7
Sa	0800	12.8	3.9	Su	0809	15.7	4.8
	1357	6.8	2.1		1427	3.5	1.1
	1947	12.2	3.7		2029	13.7	4.2
15	0212	3.9	1.2	30	0234	2.8	0.9
Su	0853	13.6	4.1	M	0906	16.5	5.0
	1506	5.4	1.6		1532	1.9	0.6
	2059	12.6	3.8		2143	14.0	4.3

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0333	3.1	0.9	16	0251	4.9	1.5
Tu	0956	17.3	5.3	W	0906	15.5	4.7
	1625	0.4	0.1		1554	2.1	0.6
	2244	14.6	4.5		2212	12.8	3.9
2	0425	3.3	1.0	17	0346	4.9	1.5
W	1039	17.9	5.5	Th	0951	16.4	5.0
	1711	-0.9	-0.3		1642	0.5	0.2
	2334	15.2	4.6		2305	13.7	4.2
3	0510	3.4	1.0	18	0436	4.6	1.4
Th	1121	18.3	5.6	F	1037	17.4	5.3
	1753	-1.7	-0.5		1726	-1.1	-0.3
					2355	14.6	4.5
4	0022	15.5	4.7	19	0524	4.1	1.2
F	0553	3.6	1.1	Sa	1124	18.3	5.6
	1201	18.3	5.6		1811	-2.4	-0.7
	1832	-2.1	-0.6				
5	0104	15.7	4.8	20	0040	15.4	4.7
Sa	0631	3.8	1.2	Su	0609	3.7	1.1
	1236	18.2	5.5		1209	19.1	5.8
	1911	-2.1	-0.6		1854	-3.3	-1.0
6	0141	15.6	4.8	21	0125	16.0	4.9
Su	0710	4.1	1.2	M	0656	3.3	1.0
	1312	17.8	5.4		1256	19.5	5.9
	1947	-1.8	-0.5		1938	-3.7	-1.1
7	0221	15.3	4.7	22	0211	16.4	5.0
M	0748	4.4	1.3	Tu	0743	3.1	0.9
	1350	17.3	5.3		1343	19.5	5.9
	2025	-1.2	-0.4		2023	-3.6	-1.1
8	0258	14.9	4.5	23	0256	16.6	5.1
Tu	0825	4.9	1.5	W	0831	3.0	0.9
	1426	16.6	5.1		1431	18.9	5.8
	2102	-0.5	-0.2		2110	-2.9	-0.9
9	0337	14.4	4.4	24	0345	16.6	5.1
W	0905	5.4	1.6	Th	0923	3.1	0.9
	1502	15.8	4.8		1526	17.8	5.4
	2142	0.4	0.1		2158	-1.8	-0.5
10	0419	14.0	4.3	25	0435	16.5	5.0
Th	0947	5.8	1.8	F	1022	3.3	1.0
	1544	14.8	4.5		1622	16.4	5.0
	2222	1.4	0.4		2248	-0.3	-0.1
11	0501	13.7	4.2	26	0525	16.4	5.0
F	1038	6.2	1.9	Sa	1127	3.4	1.0
	1632	13.7	4.2		1725	14.8	4.5
	2307	2.4	0.7		2341	1.3	0.4
12	0549	13.6	4.1	27	0621	16.2	4.9
Sa	1138	6.3	1.9	Su	1237	3.2	1.0
	1728	12.7	3.9		1837	13.4	4.1
	2357	3.3	1.0				
13	0638	13.7	4.2	28	0042	2.9	0.9
Su	1249	6.0	1.8	M	0719	16.1	4.9
	1834	12.0	3.7		1353	2.7	0.8
					2000	12.6	3.8
14	0053	4.1	1.2	29	0148	4.2	1.3
M	0728	14.1	4.3	Tu	0818	16.1	4.9
	1400	5.1	1.6		1503	1.8	0.5
	1953	11.7	3.6		2124	12.6	3.8
15	0151	4.7	1.4	30	0257	4.9	1.5
Tu	0819	14.7	4.5	W	0919	16.3	5.0
	1501	3.7	1.1		1604	0.8	0.2
	2106	12.1	3.7		2234	13.1	4.0
				31	0359	5.2	1.6
				Th	1015	16.5	5.0
					1657	-0.1	0.0
					2332	13.7	4.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0150	10.0	3.0	16	0205	9.0	2.7
Th	0709	3.6	1.1	F	0719	4.2	1.3
	1304	12.6	3.8		1309	10.6	3.2
	2000	-2.6	-0.8		2000	-0.6	-0.2
2	0238	10.2	3.1	17	0235	9.2	2.8
F	0802	3.4	1.0	Sa	0758	3.9	1.2
	1356	12.1	3.7		1344	10.4	3.2
	2046	-2.0	-0.6		2030	-0.4	-0.1
3	0321	10.3	3.1	18	0304	9.4	2.9
Sa	0856	3.2	1.0	Su	0837	3.7	1.1
	1446	11.2	3.4		1420	10.0	3.0
	2131	-1.1	-0.3		2059	0.1	0.0
4	0406	10.4	3.2	19	0333	9.5	2.9
Su	0954	3.1	0.9	M	0915	3.5	1.1
	1541	10.1	3.1		1459	9.4	2.9
	2216	0.0	0.0		2131	0.7	0.2
5	0452	10.3	3.1	20	0402	9.7	3.0
M	1057	3.0	0.9	Tu	1000	3.2	1.0
	1642	9.0	2.7		1547	8.7	2.7
	2302	1.3	0.4		2200	1.5	0.5
6	0540	10.2	3.1	21	0433	9.8	3.0
Tu	1203	2.8	0.9	W	1053	2.9	0.9
	1751	7.9	2.4		1637	7.9	2.4
	2348	2.5	0.8		2238	2.4	0.7
7	0628	10.1	3.1	22	0514	9.9	3.0
W	1315	2.5	0.8	Th	1156	2.4	0.7
	1912	7.1	2.2		1748	7.2	2.2
					2323	3.3	1.0
8	0038	3.6	1.1	23	0602	10.0	3.0
Th	0716	10.0	3.0	F	1305	1.9	0.6
	1426	2.0	0.6		1919	6.8	2.1
	2043	6.9	2.1				
9	0139	4.5	1.4	24	0019	4.2	1.3
F	0812	9.9	3.0	Sa	0658	10.1	3.1
	1530	1.4	0.4		1423	1.1	0.3
	2203	7.1	2.2		2100	6.9	2.1
10	0245	5.0	1.5	25	0138	4.8	1.5
Sa	0901	9.9	3.0	Su	0804	10.4	3.2
	1622	0.9	0.3		1533	0.1	0.0
	2307	7.5	2.3		2219	7.5	2.3
11	0348	5.2	1.6	26	0301	4.9	1.5
Su	0950	10.0	3.0	M	0913	10.9	3.3
	1707	0.4	0.1		1635	-0.9	-0.3
	2354	7.9	2.4		2320	8.3	2.5
12	0440	5.1	1.6	27	0417	4.6	1.4
M	1034	10.2	3.1	Tu	1017	11.4	3.5
	1745	-0.1	0.0		1728	-1.7	-0.5
13	0032	8.2	2.5	28	0009	9.0	2.7
Tu	0525	4.9	1.5	W	0517	3.9	1.2
	1116	10.4	3.2		1115	11.9	3.6
	1822	-0.4	-0.1		1816	-2.3	-0.7
14	0103	8.5	2.6	29	0052	9.7	3.0
W	0605	4.7	1.4	Th	0613	3.2	1.0
	1155	10.6	3.2		1210	12.2	3.7
	1856	-0.6	-0.2		1901	-2.5	-0.8
15	0136	8.8	2.7	30	0131	10.3	3.1
Th	0643	4.4	1.3	F	0703	2.6	0.8
	1231	10.7	3.3		1259	12.1	3.7
	1928	-0.7	-0.2		1942	-2.3	-0.7
				31	0210	10.6	3.2
				Sa	0753	2.0	0.6
					1349	11.7	3.6
					2024	-1.6	-0.5

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0248	10.9	3.3	16	0222	10.0	3.0
Su	0842	1.7	0.5	M	0815	1.9	0.6
	1437	10.9	3.3		1411	9.9	3.0
	2059	-0.7	-0.2		2027	0.2	0.1
2	0327	10.8	3.3	17	0248	10.2	3.1
M	0931	1.5	0.5	Tu	0853	1.6	0.5
	1525	9.8	3.0		1448	9.4	2.9
	2138	0.5	0.2		2055	0.9	0.3
3	0405	10.6	3.2	18	0315	10.3	3.1
Tu	1021	1.6	0.5	W	0935	1.3	0.4
	1616	8.7	2.7		1533	8.6	2.6
	2216	1.7	0.5		2127	1.8	0.5
4	0441	10.3	3.1	19	0348	10.3	3.1
W	1117	1.8	0.5	Th	1021	1.2	0.4
	1717	7.6	2.3		1626	7.8	2.4
	2253	3.0	0.9		2202	2.7	0.8
5	0523	9.8	3.0	20	0424	10.1	3.1
Th	1219	1.9	0.6	F	1120	1.1	0.3
	1831	6.7	2.0		1730	7.0	2.1
	2337	4.1	1.2		2244	3.7	1.1
6	0610	9.4	2.9	21	0513	9.9	3.0
F	1332	2.0	0.6	Sa	1235	1.1	0.3
	2011	6.3	1.9		1905	6.5	2.0
					2347	4.5	1.4
7	0033	5.0	1.5	22	0620	9.7	3.0
Sa	0708	9.0	2.7	Su	1358	0.7	0.2
	1450	1.7	0.5		2055	6.6	2.0
	2153	6.5	2.0				
8	0159	5.5	1.7	23	0119	5.1	1.6
Su	0818	8.9	2.7	M	0742	9.7	3.0
	1556	1.3	0.4		1518	0.1	0.0
	2306	7.0	2.1		2217	7.4	2.3
9	0326	5.5	1.7	24	0303	4.9	1.5
M	0923	9.0	2.7	Tu	0905	10.0	3.0
	1648	0.7	0.2		1623	-0.7	-0.2
	2342	7.5	2.3		2306	8.3	2.5
10	0430	5.1	1.6	25	0418	4.1	1.2
Tu	1019	9.4	2.9	W	1015	10.6	3.2
	1728	0.2	0.1		1715	-1.4	-0.4
					2351	9.1	2.8
11	0014	8.0	2.4	26	0516	3.0	0.9
W	0515	4.6	1.4	Th	1115	11.1	3.4
	1104	9.8	3.0		1759	-1.7	-0.5
	1804	-0.3	-0.1				
12	0039	8.5	2.6	27	0027	9.9	3.0
Th	0557	4.0	1.2	F	0609	2.0	0.6
	1146	10.2	3.1		1205	11.4	3.5
	1836	-0.6	-0.2		1841	-1.8	-0.5
13	0104	9.0	2.7	28	0102	10.5	3.2
F	0630	3.4	1.0	Sa	0653	1.1	0.3
	1222	10.4	3.2		1254	11.3	3.4
	1904	-0.7	-0.2		1919	-1.4	-0.4
14	0132	9.4	2.9				
Sa	0707	2.9	0.9				
	1257	10.4	3.2				
	1933	-0.6	-0.2				
15	0157	9.7	3.0				
Su	0741	2.4	0.7				
	1334	10.2	3.1				
	1958	-0.3	-0.1				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0137	10.9	3.3	16	0112	10.2	3.1
Su	0739	0.4	0.1	M	0717	0.6	0.2
	1339	10.9	3.3		1322	9.9	3.0
	1953	-0.7	-0.2		1926	0.3	0.1
2	0209	11.1	3.4	17	0137	10.5	3.2
M	0821	0.1	0.0	Tu	0752	0.0	0.0
	1424	10.3	3.1		1401	9.6	2.9
	2027	0.2	0.1		1955	0.9	0.3
3	0243	11.0	3.4	18	0205	10.7	3.3
Tu	0902	0.1	0.0	W	0830	-0.3	-0.1
	1507	9.4	2.9		1440	9.1	2.8
	2102	1.3	0.4		2027	1.6	0.5
4	0312	10.6	3.2	19	0235	10.7	3.3
W	0944	0.3	0.1	Th	0912	-0.4	-0.1
	1552	8.4	2.6		1528	8.5	2.6
	2131	2.4	0.7		2101	2.4	0.7
5	0346	10.1	3.1	20	0309	10.5	3.2
Th	1031	0.8	0.2	F	0959	-0.3	-0.1
	1645	7.3	2.2		1621	7.7	2.3
	2206	3.4	1.0		2138	3.3	1.0
6	0421	9.4	2.9	21	0352	10.1	3.1
F	1127	1.3	0.4	Sa	1058	0.1	0.0
	1748	6.5	2.0		1730	6.9	2.1
	2242	4.4	1.3		2229	4.1	1.2
7	0504	8.8	2.7	22	0445	9.6	2.9
Sa	1236	1.8	0.5	Su	1214	0.4	0.1
	1931	6.0	1.8		1908	6.6	2.0
	2333	5.1	1.6		2346	4.8	1.5
8	0606	8.2	2.5	23	0601	9.1	2.8
Su	1402	1.9	0.6	M	1340	0.4	0.1
	2132	6.2	1.9		2050	7.0	2.1
9	0124	5.6	1.7	24	0136	4.9	1.5
M	0732	7.9	2.4	Tu	0737	8.9	2.7
	1518	1.6	0.5		1500	0.1	0.0
	2233	6.8	2.1		2155	7.7	2.3
10	0310	5.3	1.6	25	0313	4.1	1.2
Tu	0855	8.1	2.5	W	0905	9.2	2.8
	1615	1.0	0.3		1603	-0.3	-0.1
	2309	7.4	2.3		2240	8.6	2.6
11	0417	4.6	1.4	26	0419	3.0	0.9
W	0958	8.6	2.6	Th	1012	9.7	3.0
	1657	0.5	0.2		1651	-0.6	-0.2
	2336	8.0	2.4		2319	9.5	2.9
12	0502	3.8	1.2	27	0511	1.7	0.5
Th	1049	9.1	2.8	F	1111	10.1	3.1
	1732	0.1	0.0		1733	-0.7	-0.2
					2354	10.2	3.1
13	0000	8.6	2.6	28	0557	0.6	0.2
F	0537	3.0	0.9	Sa	1200	10.3	3.1
	1128	9.6	2.9		1812	-0.5	-0.2
	1801	-0.1	0.0				
14	0024	9.2	2.8	29	0026	10.7	3.3
Sa	0610	2.1	0.6	Su	0639	-0.3	-0.1
	1206	9.9	3.0		1245	10.3	3.1
	1830	-0.2	-0.1		1847	0.0	0.0
15	0047	9.7	3.0	30	0058	11.0	3.4
Su	0645	1.3	0.4	M	0717	-0.9	-0.3
	1245	10.0	3.0		1328	10.0	3.0
	1858	0.0	0.0		1922	0.7	0.2
				31	0128	11.0	3.4
				Tu	0756	-1.1	-0.3
					1409	9.5	2.9
					1954	1.4	0.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SITKA, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0157	10.8	3.3	16	0128	11.1	3.4
W	0833	-0.9	-0.3	Th	0812	-1.8	-0.5
	1450	8.8	2.7		1435	8.9	2.7
	2026	2.3	0.7		2004	2.5	0.8
2	0229	10.3	3.1	17	0203	11.0	3.4
Th	0912	-0.5	-0.2	F	0854	-1.7	-0.5
	1533	8.0	2.4		1527	8.3	2.5
	2056	3.1	0.9		2043	3.1	0.9
3	0258	9.8	3.0	18	0246	10.6	3.2
F	0952	0.1	0.0	Sa	0947	-1.3	-0.4
	1624	7.2	2.2		1626	7.7	2.3
	2128	3.9	1.2		2131	3.8	1.2
4	0333	9.1	2.8	19	0333	10.0	3.0
Sa	1041	0.8	0.2	Su	1049	-0.7	-0.2
	1722	6.5	2.0		1740	7.3	2.2
	2208	4.6	1.4		2237	4.4	1.3
5	0415	8.4	2.6	20	0437	9.2	2.8
Su	1143	1.4	0.4	M	1201	-0.1	0.0
	1848	6.2	1.9		1903	7.3	2.2
	2308	5.2	1.6				
6	0514	7.7	2.3	21	0009	4.6	1.4
M	1305	1.7	0.5	Tu	0559	8.5	2.6
	2034	6.3	1.9		1318	0.2	0.1
					2018	7.7	2.3
7	0100	5.4	1.6	22	0151	4.1	1.2
Tu	0642	7.3	2.2	W	0735	8.2	2.5
	1423	1.7	0.5		1428	0.3	0.1
	2134	6.8	2.1		2118	8.4	2.6
8	0245	4.9	1.5	23	0311	3.0	0.9
W	0819	7.4	2.3	Th	0857	8.3	2.5
	1523	1.4	0.4		1530	0.4	0.1
	2212	7.5	2.3		2201	9.2	2.8
9	0348	4.0	1.2	24	0410	1.7	0.5
Th	0926	7.8	2.4	F	1006	8.7	2.7
	1607	1.1	0.3		1619	0.5	0.2
	2241	8.2	2.5		2240	9.9	3.0
10	0430	3.0	0.9	25	0459	0.5	0.2
F	1020	8.3	2.5	Sa	1102	9.0	2.7
	1644	0.8	0.2		1701	0.8	0.2
	2307	8.9	2.7		2315	10.4	3.2
11	0509	1.9	0.6	26	0541	-0.5	-0.2
Sa	1107	8.8	2.7	Su	1152	9.2	2.8
	1718	0.7	0.2		1739	1.1	0.3
	2331	9.5	2.9		2349	10.7	3.3
12	0544	0.8	0.2	27	0620	-1.2	-0.4
Su	1147	9.2	2.8	M	1235	9.2	2.8
	1749	0.8	0.2		1815	1.6	0.5
	2358	10.1	3.1				
13	0617	-0.2	-0.1	28	0018	10.8	3.3
M	1227	9.4	2.9	Tu	0657	-1.6	-0.5
	1821	1.0	0.3		1317	9.0	2.7
					1850	2.1	0.6
14	0026	10.6	3.2	29	0049	10.7	3.3
Tu	0653	-1.0	-0.3	W	0730	-1.6	-0.5
	1309	9.4	2.9		1358	8.7	2.7
	1853	1.4	0.4		1922	2.7	0.8
15	0056	11.0	3.4	30	0119	10.4	3.2
W	0730	-1.6	-0.5	Th	0808	-1.4	-0.4
	1351	9.3	2.8		1438	8.3	2.5
	1927	1.9	0.6		1957	3.2	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0150	10.0	3.0	16	0147	11.1	3.4
F	0845	-1.0	-0.3	Sa	0848	-2.5	-0.8
	1520	7.8	2.4		1528	8.4	2.6
	2029	3.7	1.1		2039	3.4	1.0
2	0222	9.5	2.9	17	0236	10.6	3.2
Sa	0925	-0.4	-0.1	Su	0941	-2.0	-0.6
	1608	7.2	2.2		1627	8.1	2.5
	2108	4.2	1.3		2138	3.8	1.2
3	0259	8.9	2.7	18	0332	9.9	3.0
Su	1010	0.2	0.1	M	1037	-1.3	-0.4
	1705	6.8	2.1		1730	8.0	2.4
	2151	4.7	1.4		2250	3.9	1.2
4	0342	8.2	2.5	19	0437	8.9	2.7
M	1103	0.8	0.2	Tu	1140	-0.5	-0.2
	1814	6.7	2.0		1835	8.2	2.5
	2301	5.0	1.5				
5	0441	7.6	2.3	20	0020	3.7	1.1
Tu	1207	1.3	0.4	W	0557	8.1	2.5
	1923	6.8	2.1		1247	0.2	0.1
					1938	8.6	2.6
6	0036	4.9	1.5	21	0143	3.0	0.9
W	0600	7.1	2.2	Th	0726	7.6	2.3
	1313	1.5	0.5		1348	0.8	0.2
	2018	7.2	2.2		2031	9.1	2.8
7	0203	4.3	1.3	22	0252	1.9	0.6
Th	0729	6.9	2.1	F	0847	7.5	2.3
	1410	1.6	0.5		1447	1.4	0.4
	2100	7.8	2.4		2118	9.6	2.9
8	0306	3.4	1.0	23	0351	0.8	0.2
F	0845	7.1	2.2	Sa	0955	7.7	2.3
	1501	1.7	0.5		1537	1.8	0.5
	2134	8.5	2.6		2157	10.0	3.0
9	0353	2.2	0.7	24	0440	-0.2	-0.1
Sa	0948	7.5	2.3	Su	1056	7.9	2.4
	1543	1.7	0.5		1622	2.3	0.7
	2206	9.2	2.8		2235	10.3	3.1
10	0433	0.9	0.3	25	0522	-1.0	-0.3
Su	1040	8.0	2.4	M	1145	8.1	2.5
	1625	1.8	0.5		1707	2.6	0.8
	2238	9.9	3.0		2310	10.4	3.2
11	0512	-0.3	-0.1	26	0601	-1.4	-0.4
M	1125	8.4	2.6	Tu	1228	8.2	2.5
	1702	1.9	0.6		1744	3.0	0.9
	2310	10.5	3.2		2344	10.4	3.2
12	0551	-1.3	-0.4	27	0638	-1.7	-0.5
Tu	1213	8.7	2.7	W	1310	8.2	2.5
	1742	2.1	0.6		1824	3.3	1.0
	2344	11.0	3.4				
13	0633	-2.2	-0.7	28	0016	10.3	3.1
W	1259	8.9	2.7	Th	0715	-1.7	-0.5
	1824	2.4	0.7		1350	8.1	2.5
					1900	3.5	1.1
14	0021	11.3	3.4	29	0050	10.1	3.1
Th	0715	-2.7	-0.8	F	0750	-1.5	-0.5
	1345	8.9	2.7		1429	7.9	2.4
	1903	2.7	0.8		1935	3.8	1.2
15	0102	11.4	3.5	30	0124	9.8	3.0
F	0800	-2.8	-0.9	Sa	0827	-1.2	-0.4
	1435	8.7	2.7		1511	7.7	2.3
	1948	3.1	0.9		2014	4.0	1.2
				31	0159	9.4	2.9
				Su	0907	-0.8	-0.2
					1554	7.5	2.3
					2054	4.3	1.3

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0238	8.9	2.7	16	0330	9.8	3.0
M	0947	-0.3	-0.1	Tu	1021	-1.5	-0.5
	1639	7.3	2.2		1703	8.9	2.7
	2144	4.4	1.3		2249	2.8	0.9
2	0323	8.3	2.5	17	0432	8.8	2.7
Tu	1029	0.2	0.1	W	1111	-0.5	-0.2
	1727	7.3	2.2		1756	9.1	2.8
	2244	4.5	1.4				
3	0413	7.6	2.3	18	0002	2.5	0.8
W	1116	0.8	0.2	Th	0545	7.8	2.4
	1815	7.5	2.3		1207	0.5	0.2
	2354	4.2	1.3		1849	9.2	2.8
4	0517	7.0	2.1	19	0116	1.9	0.6
Th	1204	1.3	0.4	F	0704	7.1	2.2
	1859	7.8	2.4		1302	1.5	0.5
					1940	9.4	2.9
5	0107	3.6	1.1	20	0226	1.1	0.3
F	0635	6.6	2.0	Sa	0829	6.7	2.0
	1254	1.8	0.5		1359	2.4	0.7
	1943	8.3	2.5		2028	9.6	2.9
6	0213	2.7	0.8	21	0326	0.3	0.1
Sa	0756	6.5	2.0	Su	0943	6.8	2.1
	1348	2.2	0.7		1457	3.0	0.9
	2025	8.8	2.7		2113	9.7	3.0
7	0308	1.5	0.5	22	0418	-0.3	-0.1
Su	0908	6.7	2.0	M	1046	7.0	2.1
	1440	2.6	0.8		1550	3.5	1.1
	2104	9.4	2.9		2158	9.8	3.0
8	0354	0.3	0.1	23	0504	-0.9	-0.3
M	1013	7.2	2.2	Tu	1139	7.3	2.2
	1532	2.8	0.9		1638	3.7	1.1
	2145	10.1	3.1		2238	9.8	3.0
9	0443	-0.9	-0.3	24	0545	-1.2	-0.4
Tu	1109	7.7	2.3	W	1225	7.5	2.3
	1622	3.0	0.9		1725	3.8	1.2
	2227	10.6	3.2		2320	9.9	3.0
10	0528	-2.0	-0.6	25	0623	-1.4	-0.4
W	1200	8.1	2.5	Th	1305	7.7	2.3
	1710	3.0	0.9		1806	3.8	1.2
	2312	11.1	3.4		2357	9.9	3.0
11	0614	-2.7	-0.8	26	0700	-1.5	-0.5
Th	1250	8.5	2.6	F	1339	7.8	2.4
	1800	3.0	0.9		1844	3.8	1.2
	2358	11.5	3.5				
12	0702	-3.2	-1.0	27	0034	9.8	3.0
F	1339	8.7	2.7	Sa	0735	-1.5	-0.5
	1849	3.1	0.9		1417	7.8	2.4
					1923	3.8	1.2
13	0046	11.5	3.5	28	0111	9.6	2.9
Sa	0750	-3.3	-1.0	Su	0811	-1.3	-0.4
	1428	8.8	2.7		1451	7.9	2.4
	1942	3.1	0.9		2001	3.7	1.1
14	0138	11.2	3.4	29	0147	9.3	2.8
Su	0838	-3.0	-0.9	M	0843	-1.1	-0.3
	1520	8.8	2.7		1527	7.9	2.4
	2038	3.0	0.9		2043	3.7	1.1
15	0231	10.7	3.3	30	0225	8.9	2.7
M	0930	-2.4	-0.7	Tu	0919	-0.7	-0.2
	1612	8.8	2.7		1600	8.0	2.4
	2141	3.0	0.9		2127	3.6	-1.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SITKA, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0307	8.4	2.6	16	0420	8.6	2.6
W	0952	-0.1	0.0	Th	1036	-0.1	0.0
	1638	8.1	2.5		1709	9.6	2.9
	2216	3.4	1.0		2329	1.3	0.4
2	0351	7.7	2.3	17	0523	7.5	2.3
Th	1029	0.5	0.2	F	1124	1.2	0.4
	1714	8.2	2.5		1756	9.5	2.9
	2311	3.1	0.9				
3	0445	7.1	2.2	18	0039	1.1	0.3
F	1105	1.2	0.4	Sa	0641	6.6	2.0
	1751	8.4	2.6		1214	2.4	0.7
					1846	9.3	2.8
4	0015	2.6	0.8	19	0148	0.8	0.2
Sa	0551	6.5	2.0	Su	0807	6.2	1.9
	1151	2.0	0.6		1310	3.3	1.0
	1833	8.7	2.7		1941	9.1	2.8
5	0119	1.9	0.6	20	0257	0.4	0.1
Su	0711	6.1	1.9	M	0932	6.2	1.9
	1242	2.7	0.8		1418	4.0	1.2
	1919	9.0	2.7		2034	9.0	2.7
6	0223	1.0	0.3	21	0356	0.0	0.0
M	0839	6.2	1.9	Tu	1042	6.5	2.0
	1341	3.3	1.0		1524	4.3	1.3
	2012	9.5	2.9		2129	9.0	2.7
7	0322	-0.1	0.0	22	0448	-0.4	-0.1
Tu	0953	6.6	2.0	W	1134	6.9	2.1
	1447	3.6	1.1		1625	4.2	1.3
	2105	10.0	3.0		2219	9.2	2.8
8	0420	-1.2	-0.4	23	0531	-0.8	-0.2
W	1057	7.1	2.2	Th	1216	7.2	2.2
	1553	3.6	1.1		1712	4.0	1.2
	2158	10.5	3.2		2303	9.4	2.9
9	0512	-2.1	-0.6	24	0611	-1.1	-0.3
Th	1152	7.7	2.3	F	1251	7.6	2.3
	1651	3.4	1.0		1757	3.7	1.1
	2254	11.1	3.4		2345	9.5	2.9
10	0602	-2.9	-0.9	25	0643	-1.3	-0.4
F	1240	8.3	2.5	Sa	1323	7.9	2.4
	1750	3.1	0.9		1834	3.4	1.0
	2349	11.4	3.5				
11	0650	-3.3	-1.0	26	0024	9.6	2.9
Sa	1327	8.8	2.7	Su	0715	-1.4	-0.4
	1842	2.7	0.8		1352	8.1	2.5
					1909	3.1	0.9
12	0041	11.5	3.5	27	0059	9.6	2.9
Su	0738	-3.4	-1.0	M	0747	-1.3	-0.4
	1412	9.2	2.8		1419	8.3	2.5
	1937	2.3	0.7		1948	2.8	0.9
13	0133	11.3	3.4	28	0135	9.4	2.9
M	0824	-3.0	-0.9	Tu	0817	-1.0	-0.3
	1456	9.4	2.9		1448	8.5	2.6
	2032	1.9	0.6		2024	2.6	0.8
14	0226	10.6	3.2	29	0213	9.0	2.7
Tu	0908	-2.3	-0.7	W	0846	-0.6	-0.2
	1539	9.6	2.9		1515	8.7	2.7
	2128	1.7	0.5		2103	2.3	0.7
15	0321	9.7	3.0	30	0249	8.5	2.6
W	0952	-1.3	-0.4	Th	0914	0.0	0.0
	1624	9.7	3.0		1544	8.8	2.7
	2227	1.5	0.5		2144	2.1	0.6
				31	0331	7.9	2.4
				F	0944	0.8	0.2
					1613	8.9	2.7
					2231	1.8	0.5

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0421	7.2	2.2	16	0609	6.4	2.0
Sa	1018	1.6	0.5	Su	1122	3.3	1.0
	1649	8.9	2.7		1750	8.9	2.7
	2326	1.6	0.5				
2	0521	6.5	2.0	17	0104	0.9	0.3
Su	1057	2.4	0.7	M	0741	5.9	1.8
	1730	9.0	2.7		1223	4.2	1.3
					1849	8.4	2.6
3	0031	1.2	0.4	18	0221	0.9	0.3
M	0640	6.0	1.8	Tu	0924	6.0	1.8
	1146	3.3	1.0		1346	4.7	1.4
	1822	9.1	2.8		1959	8.2	2.5
4	0144	0.6	0.2	19	0333	0.6	0.2
Tu	0818	5.9	1.8	W	1033	6.5	2.0
	1258	3.9	1.2		1513	4.7	1.4
	1927	9.3	2.8		2107	8.3	2.5
5	0300	-0.2	-0.1	20	0427	0.2	0.1
W	0942	6.4	2.0	Th	1119	7.0	2.1
	1424	4.2	1.3		1619	4.3	1.3
	2037	9.7	3.0		2206	8.6	2.6
6	0404	-1.1	-0.3	21	0512	-0.2	-0.1
Th	1051	7.1	2.2	F	1157	7.5	2.3
	1542	3.9	1.2		1704	3.8	1.2
	2146	10.2	3.1		2251	9.0	2.7
7	0459	-1.9	-0.6	22	0547	-0.6	-0.2
F	1140	7.9	2.4	Sa	1222	7.9	2.4
	1646	3.3	1.0		1744	3.2	1.0
	2248	10.8	3.3		2333	9.4	2.9
8	0549	-2.6	-0.8	23	0619	-0.8	-0.2
Sa	1224	8.6	2.6	Su	1248	8.4	2.6
	1745	2.5	0.8		1819	2.6	0.8
	2344	11.3	3.4				
9	0636	-2.9	-0.9	24	0012	9.6	2.9
Su	1304	9.3	2.8	M	0648	-0.9	-0.3
	1836	1.7	0.5		1313	8.8	2.7
					1852	2.1	0.6
10	0037	11.4	3.5	25	0047	9.6	2.9
M	0718	-2.8	-0.9	Tu	0716	-0.7	-0.2
	1343	9.8	3.0		1337	9.1	2.8
	1927	1.0	0.3		1926	1.6	0.5
11	0128	11.1	3.4	26	0121	9.5	2.9
Tu	0800	-2.3	-0.7	W	0742	-0.4	-0.1
	1422	10.2	3.1		1400	9.3	2.8
	2017	0.5	0.2		200[illegible]	1.2	0.4
12	0217	10.5	3.2	27	0156	9.2	2.8
W	0839	-1.5	-0.5	Th	0810	0.1	0.0
	1459	10.3	3.1		1424	9.5	2.9
	2106	0.2	0.1		2034	0.9	0.3
13	0307	9.6	2.9	28	0234	8.7	2.7
Th	0918	-0.3	-0.1	F	0835	0.8	0.2
	1539	10.2	3.1		1451	9.6	2.9
	2157	0.2	0.1		2112	0.7	0.2
14	0400	8.5	2.6	29	0315	8.1	2.5
F	0957	0.9	0.3	Sa	0907	1.5	0.5
	1618	9.9	3.0		1521	9.6	2.9
	2253	0.4	0.1		2157	0.6	0.2
15	0459	7.4	2.3	30	0402	7.4	2.3
Sa	1036	2.2	0.7	Su	0939	2.4	0.7
	1700	9.4	2.9		1557	9.5	2.9
	2353	0.7	0.2		2250	0.6	0.2
				31	0503	6.7	2.0
				M	1018	3.2	1.0
					1642	9.2	2.8
					2356	0.7	0.2

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0628	6.1	1.9	16	0140	1.5	0.5
Tu	1113	4.1	1.2	W	0905	6.3	1.9
	1742	9.0	2.7		1330	5.3	1.6
					1922	7.6	2.3
2	0115	0.5	0.2	17	0257	1.3	0.4
W	0811	6.1	1.9	Th	1008	6.9	2.1
	1243	4.6	1.4		1508	4.9	1.5
	1902	8.9	2.7		2048	7.8	2.4
3	0239	0.0	0.0	18	0355	0.9	0.3
Th	0937	6.8	2.1	F	1048	7.4	2.3
	1426	4.5	1.4		1606	4.2	1.3
	2031	9.3	2.8		2150	8.3	2.5
4	0349	-0.7	-0.2	19	0438	0.6	0.2
F	1035	7.6	2.3	Sa	1113	8.0	2.4
	1545	3.7	1.1		1648	3.4	1.0
	2144	9.9	3.0		2236	8.8	2.7
5	0443	-1.4	-0.4	20	0512	0.3	0.1
Sa	1118	8.6	2.6	Su	1137	8.6	2.6
	1647	2.6	0.8		1724	2.5	0.8
	2246	10.5	3.2		2318	9.2	2.8
6	0531	-1.8	-0.5	21	0544	0.1	0.0
Su	1157	9.4	2.9	M	1202	9.1	2.8
	1739	1.5	0.5		1756	1.7	0.5
	2340	10.9	3.3		2355	9.5	2.9
7	0611	-1.8	-0.5	22	0609	0.2	0.1
M	1232	10.2	3.1	Tu	1226	9.6	2.9
	1826	0.4	0.1		1828	1.0	0.3
8	0030	11.0	3.4	23	0030	9.6	2.9
Tu	0653	-1.5	-0.5	W	0638	0.4	0.1
	1307	10.7	3.3		1250	10.0	3.0
	1912	-0.4	-0.1		1900	0.3	0.1
9	0119	10.8	3.3	24	0106	9.6	2.9
W	0729	-0.9	-0.3	Th	0706	0.7	0.2
	1342	10.9	3.3		1314	10.3	3.1
	1955	-0.8	-0.2		1933	-0.1	0.0
10	0205	10.2	3.1	25	0142	9.3	2.8
Th	0805	0.0	0.0	F	0734	1.3	0.4
	1415	10.9	3.3		1339	10.5	3.2
	2040	-0.9	-0.3		2008	-0.4	-0.1
11	0251	9.4	2.9	26	0221	8.9	2.7
F	0843	1.1	0.3	Sa	0803	1.9	0.6
	1450	10.6	3.2		1409	10.5	3.2
	2125	-0.6	-0.2		2046	-0.5	-0.2
12	0339	8.4	2.6	27	0306	8.4	2.6
Sa	0917	2.2	0.7	Su	0835	2.7	0.8
	1525	10.0	3.0		1440	10.3	3.1
	2211	0.0	0.0		2131	-0.3	-0.1
13	0434	7.4	2.3	28	0356	7.7	2.3
Su	0956	3.3	1.0	M	0910	3.4	1.0
	1605	9.3	2.8		1520	10.0	3.0
	2306	0.6	0.2		2224	0.0	0.0
14	0543	6.6	2.0	29	0500	7.0	2.1
M	1038	4.2	1.3	Tu	1000	4.2	1.3
	1651	8.6	2.6		1610	9.5	2.9
					2333	0.4	0.1
15	0016	1.2	0.4	30	0630	6.7	2.0
Tu	0717	6.2	1.9	W	1109	4.9	1.5
	1140	5.0	1.5		1717	8.9	2.7
	1753	7.9	2.4				

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SITKA, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0058	0.6	0.2	16	0203	1.9	0.6
Th	0806	7.0	2.1	F	0915	7.5	2.3
	1259	5.0	1.5		1442	5.0	1.5
	1856	8.7	2.7		2009	7.5	2.3
2	0220	0.4	0.1	17	0302	1.8	0.5
F	0918	7.7	2.3	Sa	0953	8.1	2.5
	1439	4.3	1.3		1542	4.1	1.2
	2029	8.9	2.7		2118	7.9	2.4
3	0325	0.0	0.0	18	0348	1.6	0.5
Sa	1006	8.7	2.7	Su	1020	8.7	2.7
	1550	3.1	0.9		1621	3.1	0.9
	2142	9.5	2.9		2211	8.4	2.6
4	0419	-0.3	-0.1	19	0427	1.5	0.5
Su	1046	9.6	2.9	M	1046	9.3	2.8
	1643	1.7	0.5		1656	2.0	0.6
	2243	10.0	3.0		2256	8.8	2.7
5	0504	-0.3	-0.1	20	0456	1.5	0.5
M	1123	10.4	3.2	Tu	1112	10.0	3.0
	1729	0.4	0.1		1728	1.0	0.3
	2336	10.4	3.2		2334	9.2	2.8
6	0543	-0.1	0.0	21	0528	1.6	0.5
Tu	1156	11.1	3.4	W	1136	10.5	3.2
	1812	-0.6	-0.2		1803	0.1	0.0
7	0022	10.5	3.2	22	0013	9.4	2.9
W	0622	0.3	0.1	Th	0558	1.8	0.5
	1229	11.4	3.5		1203	10.9	3.3
	1854	-1.3	-0.4		1835	-0.6	-0.2
8	0108	10.3	3.1	23	0052	9.5	2.9
Th	0659	1.0	0.3	F	0630	2.2	0.7
	1303	11.5	3.5		1232	11.2	3.4
	1933	-1.5	-0.5		1910	-1.1	-0.3
9	0153	9.8	3.0	24	0131	9.4	2.9
F	0732	1.6	0.5	Sa	0703	2.6	0.8
	1336	11.3	3.4		1301	11.4	3.5
	2014	-1.4	-0.4		1949	-1.4	-0.4
10	0235	9.2	2.8	25	0215	9.1	2.8
Sa	0806	2.6	0.8	Su	0737	3.2	1.0
	1408	10.8	3.3		1336	11.3	3.4
	2053	-0.9	-0.3		2030	-1.3	-0.4
11	0323	8.5	2.6	26	0302	8.7	2.7
Su	0842	3.5	1.1	M	0816	3.7	1.1
	1440	10.2	3.1		1415	11.0	3.4
	2139	-0.2	-0.1		2117	-0.9	-0.3
12	0414	7.7	2.3	27	0359	8.2	2.5
M	0920	4.3	1.3	Tu	0902	4.3	1.3
	1516	9.4	2.9		1501	10.5	3.2
	2226	0.6	0.2		2213	-0.3	-0.1
13	0517	7.1	2.2	28	0505	7.8	2.4
Tu	1004	5.0	1.5	W	1000	4.9	1.5
	1559	8.6	2.6		1559	9.7	3.0
	2327	1.4	0.4		2320	0.3	0.1
14	0642	6.8	2.1	29	0623	7.8	2.4
W	1115	5.5	1.7	Th	1127	5.2	1.6
	1703	7.9	2.4		1715	9.0	2.7
15	0045	1.8	0.5	30	0035	0.7	0.2
Th	0813	7.0	2.1	F	0740	8.2	2.5
	1310	5.6	1.7		1313	4.8	1.5
	1836	7.4	2.3		1851	8.5	2.6
				31	0147	1.0	0.3
				Sa	0841	8.9	2.7
					1437	3.7	1.1
					2024	8.6	2.6

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0253	1.1	0.3	16	0241	2.7	0.8
Su	0928	9.8	3.0	M	0916	9.3	2.8
	1540	2.3	0.7		1542	2.9	0.9
	2137	9.0	2.7		2137	7.8	2.4
2	0345	1.3	0.4	17	0326	2.8	0.9
M	1009	10.5	3.2	Tu	0948	9.9	3.0
	1632	0.9	0.3		1622	1.7	0.5
	2238	9.4	2.9		2228	8.3	2.5
3	0431	1.5	0.5	18	0406	3.0	0.9
Tu	1046	11.2	3.4	W	1019	10.5	3.2
	1716	-0.2	-0.1		1659	0.6	0.2
	2328	9.7	3.0		2315	8.7	2.7
4	0513	1.9	0.6	19	0444	3.1	0.9
W	1120	11.6	3.5	Th	1050	11.1	3.4
	1757	-1.0	-0.3		1736	-0.4	-0.1
5	0016	9.8	3.0	20	0000	9.1	2.8
Th	0551	2.3	0.7	F	0523	3.3	1.0
	1155	11.8	3.6		1125	11.6	3.5
	1835	-1.5	-0.5		1813	-1.2	-0.4
6	0101	9.7	3.0	21	0042	9.4	2.9
F	0630	2.8	0.9	Sa	0601	3.5	1.1
	1227	11.7	3.6		1200	11.9	3.6
	1914	-1.6	-0.5		1852	-1.7	-0.5
7	0143	9.5	2.9	22	0124	9.4	2.9
Sa	0705	3.4	1.0	Su	0641	3.7	1.1
	1258	11.4	3.5		1237	12.1	3.7
	1953	-1.3	-0.4		1937	-1.9	-0.6
8	0225	9.1	2.8	23	0210	9.4	2.9
Su	0741	3.9	1.2	M	0722	4.0	1.2
	1333	10.9	3.3		1319	11.9	3.6
	2030	-0.8	-0.2		2021	-1.8	-0.5
9	0307	8.6	2.6	24	0302	9.2	2.8
M	0816	4.5	1.4	Tu	0811	4.3	1.3
	1406	10.3	3.1		1406	11.5	3.5
	2112	-0.2	-0.1		2110	-1.4	-0.4
10	0357	8.1	2.5	25	0354	9.0	2.7
Tu	0855	5.0	1.5	W	0904	4.6	1.4
	1443	9.7	3.0		1455	10.9	3.3
	2157	0.6	0.2		2203	-0.7	-0.2
11	0451	7.8	2.4	26	0453	8.9	2.7
W	0947	5.4	1.6	Th	1013	4.7	1.4
	1527	8.9	2.7		1557	10.0	3.0
	2247	1.3	0.4		2301	0.1	0.0
12	0554	7.6	2.3	27	0556	9.1	2.8
Th	1053	5.7	1.7	F	1135	4.6	1.4
	1624	8.2	2.5		1713	9.0	2.7
	2346	1.9	0.6				
13	0703	7.7	2.3	28	0006	0.9	0.3
F	1227	5.6	1.7	Sa	0658	9.4	2.9
	1740	7.6	2.3		1303	3.9	1.2
					1842	8.4	2.6
14	0050	2.3	0.7	29	0109	1.7	0.5
Sa	0759	8.1	2.5	Su	0756	9.9	3.0
	1357	5.0	1.5		1420	2.9	0.9
	1913	7.3	2.2		2012	8.1	2.5
15	0149	2.5	0.8	30	0209	2.3	0.7
Su	0841	8.7	2.7	M	0844	10.5	3.2
	1500	4.0	1.2		1521	1.6	0.5
	2033	7.4	2.3		2129	8.3	2.5

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0306	2.8	0.9	16	0214	3.9	1.2
Tu	0929	11.0	3.4	W	0843	10.1	3.1
	1617	0.5	0.2		1545	1.5	0.5
	2233	8.6	2.6		2203	7.6	2.3
2	0358	3.3	1.0	17	0309	4.2	1.3
W	1009	11.3	3.4	Th	0926	10.6	3.2
	1702	-0.4	-0.1		1630	0.4	0.1
	2325	8.9	2.7		2259	8.1	2.5
3	0445	3.6	1.1	18	0401	4.3	1.3
Th	1048	11.5	3.5	F	1009	11.2	3.4
	1741	-0.9	-0.3		1712	-0.6	-0.2
					2347	8.7	2.7
4	0014	9.1	2.8	19	0451	4.3	1.3
F	0528	3.9	1.2	Sa	1051	11.8	3.6
	1125	11.6	3.5		1758	-1.5	-0.5
	1823	-1.2	-0.4				
5	0056	9.2	2.8	20	0035	9.1	2.8
Sa	0608	4.2	1.3	Su	0539	4.2	1.3
	1203	11.5	3.5		1139	12.2	3.7
	1900	-1.2	-0.4		1842	-2.1	-0.6
6	0138	9.2	2.8	21	0119	9.5	2.9
Su	0647	4.4	1.3	M	0628	4.1	1.2
	1235	11.2	3.4		1226	12.4	3.8
	1937	-1.1	-0.3		1926	-2.3	-0.7
7	0216	9.0	2.7	22	0204	9.7	3.0
M	0723	4.6	1.4	Tu	0717	3.9	1.2
	1310	10.9	3.3		1312	12.3	3.7
	2014	-0.7	-0.2		2014	-2.2	-0.7
8	0255	8.9	2.7	23	0253	9.8	3.0
Tu	0801	4.8	1.5	W	0811	3.8	1.2
	1349	10.5	3.2		1404	11.9	3.6
	2051	-0.3	-0.1		2100	-1.7	-0.5
9	0337	8.7	2.7	24	0339	9.9	3.0
W	0845	5.0	1.5	Th	0907	3.7	1.1
	1424	9.9	3.0		1456	11.1	3.4
	2130	0.3	0.1		2147	-1.0	-0.3
10	0419	8.5	2.6	25	0426	10.0	3.0
Th	0930	5.2	1.6	F	1010	3.6	1.1
	1506	9.3	2.8		1556	10.1	3.1
	2208	0.9	0.3		2235	0.1	0.0
11	0505	8.5	2.6	26	0517	10.2	3.1
F	1029	5.2	1.6	Sa	1121	3.3	1.0
	1552	8.5	2.6		1704	9.0	2.7
	2251	1.6	0.5		2327	1.2	0.4
12	0550	8.6	2.6	27	0609	10.3	3.1
Sa	1134	5.0	1.5	Su	1234	2.8	0.9
	1654	7.8	2.4		1824	8.0	2.4
	2337	2.3	0.7				
13	0635	8.8	2.7	28	0022	2.4	0.7
Su	1251	4.5	1.4	M	0702	10.4	3.2
	1811	7.2	2.2		1349	2.1	0.6
					1951	7.5	2.3
14	0026	2.9	0.9	29	0121	3.4	1.0
M	0721	9.1	2.8	Tu	0755	10.5	3.2
	1357	3.7	1.1		1459	1.3	0.4
	1936	7.0	2.1		2118	7.5	2.3
15	0121	3.5	1.1	30	0225	4.2	1.3
Tu	0802	9.5	2.9	W	0847	10.6	3.2
	1456	2.7	0.8		1555	0.6	0.2
	2056	7.2	2.2		2230	7.8	2.4
				31	0329	4.6	1.4
				Th	0938	10.7	3.3
					1648	-0.1	0.0
					2329	8.2	2.5

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0228	12.3	3.7	16	0238	11.1	3.4
Th	0740	3.1	0.9	F	0753	3.9	1.2
	1346	15.5	4.7		1354	13.1	4.0
	2028	-3.2	-1.0		2030	-1.0	-0.3
2	0313	12.6	3.8	17	0305	11.2	3.4
F	0832	2.9	0.9	Sa	0830	3.6	1.1
	1438	15.0	4.6		1427	12.9	3.9
	2114	-2.6	-0.8		2103	-0.9	-0.3
3	0355	12.7	3.9	18	0336	11.3	3.4
Sa	0923	2.7	0.8	Su	0907	3.3	1.0
	1527	13.9	4.2		1501	12.3	3.7
	2200	-1.7	-0.5		2135	-0.5	-0.2
4	0443	12.6	3.8	19	0408	11.4	3.5
Su	1019	2.7	0.8	M	0950	3.1	0.9
	1619	12.5	3.8		1539	11.6	3.5
	2243	-0.6	-0.2		2210	0.0	0.0
5	0528	12.4	3.8	20	0437	11.4	3.5
M	1115	2.8	0.9	Tu	1035	2.9	0.9
	1719	11.0	3.4		1619	10.6	3.2
	2330	0.7	0.2		2242	0.9	0.3
6	0619	12.2	3.7	21	0514	11.5	3.5
Tu	1217	2.8	0.9	W	1122	2.7	0.8
	1828	9.6	2.9		1712	9.5	2.9
					2320	1.9	0.6
7	0015	2.1	0.6	22	0556	11.6	3.5
W	0710	12.0	3.7	Th	1220	2.5	0.8
	1325	2.8	0.9		1827	8.6	2.6
	1948	8.6	2.6				
8	0105	3.5	1.1	23	0005	3.1	0.9
Th	0800	11.9	3.6	F	0649	11.8	3.6
	1442	2.5	0.8		1326	2.2	0.7
	2108	8.3	2.5		1959	8.1	2.5
9	0204	4.6	1.4	24	0057	4.3	1.3
F	0850	11.9	3.6	Sa	0749	12.2	3.7
	1558	1.8	0.5		1445	1.5	0.5
	2226	8.4	2.6		2129	8.3	2.5
10	0316	5.4	1.6	25	0213	5.2	1.6
Sa	0939	12.0	3.7	Su	0852	12.7	3.9
	1654	1.1	0.3		1604	0.5	0.2
	2336	8.9	2.7		2246	9.1	2.8
11	0425	5.6	1.7	26	0340	5.3	1.6
Su	1025	12.2	3.7	M	0956	13.4	4.1
	1739	0.5	0.2		1707	-0.8	-0.2
					2353	10.1	3.1
12	0029	9.5	2.9	27	0454	4.8	1.5
M	0518	5.4	1.6	Tu	1059	14.1	4.3
	1110	12.4	3.8		1800	-1.9	-0.6
	1816	-0.1	0.0				
13	0107	10.0	3.0	28	0045	11.1	3.4
Tu	0603	5.1	1.6	W	0552	3.8	1.2
	1155	12.7	3.9		1200	14.8	4.5
	1851	-0.5	-0.2		1846	-2.8	-0.9
14	0139	10.5	3.2	29	0130	12.0	3.7
W	0641	4.7	1.4	Th	0643	2.8	0.9
	1237	13.0	4.0		1253	15.2	4.6
	1925	-0.8	-0.2		1929	-3.2	-1.0
15	0209	10.8	3.3	30	0211	12.7	3.9
Th	0717	4.3	1.3	F	0733	1.9	0.6
	1315	13.2	4.0		1344	15.1	4.6
	1958	-1.0	-0.3		2011	-3.1	-0.9
				31	0248	13.2	4.0
				Sa	0820	1.3	0.4
					1430	14.6	4.5
					2052	-2.6	-0.8

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0326	13.4	4.1	16	0301	12.2	3.7
Su	0908	1.0	0.3	M	0849	1.4	0.4
	1515	13.6	4.1		1449	12.4	3.8
	2131	-1.6	-0.5		2105	-0.6	-0.2
2	0403	13.3	4.1	17	0326	12.4	3.8
M	0957	1.0	0.3	Tu	0925	1.1	0.3
	1600	12.3	3.7		1525	11.7	3.6
	2210	-0.4	-0.1		2134	0.2	0.1
3	0439	13.0	4.0	18	0352	12.6	3.8
Tu	1045	1.2	0.4	W	1007	0.9	0.3
	1650	10.7	3.3		1603	10.7	3.3
	2248	1.1	0.3		2209	1.2	0.4
4	0517	12.5	3.8	19	0424	12.5	3.8
W	1135	1.7	0.5	Th	1056	1.0	0.3
	1746	9.3	2.8		1653	9.6	2.9
	2326	2.7	0.8		2245	2.4	0.7
5	0601	11.9	3.6	20	0501	12.4	3.8
Th	1234	2.2	0.7	F	1148	1.3	0.4
	1900	8.1	2.5		1804	8.6	2.6
					2328	3.8	1.2
6	0009	4.2	1.3	21	0549	12.1	3.7
F	0652	11.3	3.4	Sa	1254	1.6	0.5
	1343	2.6	0.8		1946	8.0	2.4
	2034	7.6	2.3				
7	0101	5.5	1.7	22	0025	5.0	1.5
Sa	0754	11.0	3.4	Su	0708	11.9	3.6
	1514	2.6	0.8		1418	1.5	0.5
	2209	7.8	2.4		2123	8.3	2.5
8	0223	6.4	2.0	23	0151	5.8	1.8
Su	0900	10.9	3.3	M	0834	12.0	3.7
	1633	2.1	0.6		1549	0.8	0.2
	2327	8.5	2.6		2241	9.2	2.8
9	0404	6.4	2.0	24	0337	5.6	1.7
M	1002	11.2	3.4	Tu	0951	12.6	3.8
	1723	1.3	0.4		1657	-0.3	-0.1
					2344	10.3	3.1
10	0015	9.2	2.8	25	0454	4.4	1.3
Tu	0507	5.8	1.8	W	1059	13.4	4.1
	1057	11.7	3.6		1747	-1.4	-0.4
	1801	0.5	0.2				
11	0048	9.9	3.0	26	0029	11.4	3.5
W	0552	4.9	1.5	Th	0550	3.0	0.9
	1146	12.2	3.7		1158	14.0	4.3
	1835	-0.2	-0.1		1830	-2.1	-0.6
12	0117	10.5	3.2	27	0108	12.4	3.8
Th	0628	4.0	1.2	F	0637	1.5	0.5
	1229	12.7	3.9		1248	14.4	4.4
	1906	-0.7	-0.2		1910	-2.5	-0.8
13	0142	11.0	3.4	28	0144	13.2	4.0
F	0703	3.2	1.0	Sa	0722	0.4	0.1
	1307	13.0	4.0		1335	14.3	4.4
	1936	-1.1	-0.3		1948	-2.3	-0.7
14	0207	11.5	3.5				
Sa	0738	2.5	0.8				
	1342	13.1	4.0				
	2006	-1.3	-0.4				
15	0233	11.9	3.6				
Su	0811	1.8	0.5				
	1415	12.9	3.9				
	2033	-1.1	-0.3				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0216	13.7	4.2	16	0152	12.7	3.9
Su	0804	-0.3	-0.1	M	0749	0.0	0.0
	1419	13.8	4.2		1359	12.6	3.8
	2024	-1.7	-0.5		2001	-0.5	-0.2
2	0248	13.8	4.2	17	0218	13.1	4.0
M	0848	-0.6	-0.2	Tu	0824	-0.6	-0.2
	1459	13.0	4.0		1436	12.2	3.7
	2059	-0.7	-0.2		2033	0.1	0.0
3	0319	13.7	4.2	18	0245	13.4	4.1
Tu	0928	-0.4	-0.1	W	0905	-0.8	-0.2
	1539	11.8	3.6		1514	11.6	3.5
	2134	0.6	0.2		2105	1.1	0.3
4	0348	13.2	4.0	19	0312	13.5	4.1
W	1013	0.1	0.0	Th	0945	-0.7	-0.2
	1622	10.5	3.2		1557	10.7	3.3
	2209	2.1	0.6		2141	2.2	0.7
5	0419	12.6	3.8	20	0344	13.3	4.1
Th	1056	0.9	0.3	F	1032	-0.3	-0.1
	1708	9.2	2.8		1649	9.7	3.0
	2243	3.5	1.1		2222	3.4	1.0
6	0453	11.8	3.6	21	0424	12.8	3.9
F	1145	1.8	0.5	Sa	1128	0.4	0.1
	1815	8.1	2.5		1802	8.7	2.7
	2323	4.9	1.5		2311	4.6	1.4
7	0538	10.9	3.3	22	0519	12.0	3.7
Sa	1244	2.7	0.8	Su	1234	1.1	0.3
	1953	7.6	2.3		1948	8.4	2.6
8	0009	6.0	1.8	23	0020	5.5	1.7
Su	0651	10.2	3.1	M	0652	11.4	3.5
	1410	3.2	1.0		1358	1.4	0.4
	2140	7.8	2.4		2116	8.9	2.7
9	0135	6.8	2.1	24	0156	5.9	1.8
M	0821	10.0	3.0	Tu	0832	11.3	3.4
	1556	2.8	0.9		1529	1.0	0.3
	2255	8.4	2.6		2225	9.8	3.0
10	0345	6.5	2.0	25	0340	5.0	1.5
Tu	0939	10.3	3.1	W	0951	11.8	3.6
	1657	2.0	0.6		1638	0.2	0.1
	2338	9.1	2.8		2315	10.9	3.3
11	0451	5.5	1.7	26	0451	3.4	1.0
W	1038	11.0	3.4	Th	1054	12.5	3.8
	1736	1.0	0.3		1726	-0.6	-0.2
					2358	11.9	3.6
12	0006	9.9	3.0	27	0543	1.6	0.5
Th	0534	4.2	1.3	F	1150	13.0	4.0
	1127	11.6	3.5		1808	-1.1	-0.3
	1808	0.2	0.1				
13	0035	10.6	3.2	28	0033	12.8	3.9
F	0609	3.0	0.9	Sa	0625	0.2	0.1
	1209	12.2	3.7		1240	13.2	4.0
	1835	-0.4	-0.1		1844	-1.2	-0.4
14	0100	11.4	3.5	29	0108	13.5	4.1
Sa	0642	1.8	0.5	Su	0706	-0.9	-0.3
	1248	12.6	3.8		1323	13.1	4.0
	1904	-0.8	-0.2		1919	-0.9	-0.3
15	0125	12.1	3.7	30	0137	13.9	4.2
Su	0715	0.8	0.2	M	0745	-1.5	-0.5
	1323	12.7	3.9		1404	12.7	3.9
	1932	-0.8	-0.2		1954	-0.2	-0.1
				31	0208	13.9	4.2
				Tu	0823	-1.6	-0.5
					1443	12.1	3.7
					2027	0.8	0.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0236	13.7	4.2	16	0209	14.2	4.3
W	0902	-1.3	-0.4	Th	0844	-2.2	-0.7
	1520	11.2	3.4		1507	11.3	3.4
	2059	2.0	0.6		2040	2.2	0.7
2	0303	13.2	4.0	17	0241	14.1	4.3
Th	0941	-0.6	-0.2	F	0929	-1.9	-0.6
	1600	10.3	3.1		1557	10.6	3.2
	2134	3.3	1.0		2124	3.2	1.0
3	0331	12.5	3.8	18	0320	13.6	4.1
F	1023	0.4	0.1	Sa	1018	-1.2	-0.4
	1644	9.3	2.8		1653	9.8	3.0
	2209	4.4	1.3		2213	4.1	1.2
4	0400	11.7	3.6	19	0408	12.8	3.9
Sa	1109	1.4	0.4	Su	1117	-0.3	-0.1
	1745	8.4	2.6		1813	9.3	2.8
	2248	5.4	1.6		2312	4.9	1.5
5	0442	10.7	3.3	20	0514	11.7	3.6
Su	1201	2.4	0.7	M	1223	0.6	0.2
	1918	7.9	2.4		1942	9.3	2.8
	2343	6.2	1.9				
6	0551	9.8	3.0	21	0028	5.3	1.6
M	1313	3.0	0.9	Tu	0654	10.9	3.3
	2053	8.0	2.4		1338	1.1	0.3
					2055	9.8	3.0
7	0105	6.6	2.0	22	0203	5.0	1.5
Tu	0741	9.4	2.9	W	0827	10.7	3.3
	1449	3.0	0.9		1500	1.1	0.3
	2153	8.6	2.6		2151	10.7	3.3
8	0304	6.1	1.9	23	0333	3.8	1.2
W	0903	9.7	3.0	Th	0942	11.0	3.4
	1606	2.4	0.7		1605	0.7	0.2
	2238	9.3	2.8		2238	11.6	3.5
9	0420	4.9	1.5	24	0441	2.1	0.6
Th	1006	10.2	3.1	F	1044	11.3	3.4
	1649	1.6	0.5		1654	0.4	0.1
	2307	10.1	3.1		2318	12.4	3.8
10	0505	3.4	1.0	25	0527	0.4	0.1
F	1055	10.8	3.3	Sa	1139	11.5	3.5
	1721	0.9	0.3		1736	0.3	0.1
	2339	11.0	3.4		2355	13.1	4.0
11	0540	1.9	0.6	26	0609	-0.8	-0.2
Sa	1140	11.3	3.4	Su	1229	11.7	3.6
	1753	0.4	0.1		1811	0.5	0.2
12	0008	11.9	3.6	27	0027	13.5	4.1
Su	0615	0.5	0.2	M	0648	-1.7	-0.5
	1222	11.7	3.6		1312	11.6	3.5
	1825	0.2	0.1		1848	1.0	0.3
13	0039	12.7	3.9	28	0059	13.7	4.2
M	0648	-0.7	-0.2	Tu	0723	-2.1	-0.6
	1304	12.0	3.7		1352	11.5	3.5
	1857	0.3	0.1		1921	1.7	0.5
14	0107	13.4	4.1	29	0130	13.6	4.1
Tu	0726	-1.6	-0.5	W	0800	-2.0	-0.6
	1343	12.0	3.7		1430	11.1	3.4
	1929	0.7	0.2		1957	2.5	0.8
15	0138	13.9	4.2	30	0159	13.4	4.1
W	0803	-2.2	-0.7	Th	0837	-1.5	-0.5
	1425	11.8	3.6		1506	10.7	3.3
	2004	1.4	0.4		2030	3.4	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0227	12.9	3.9	16	0226	14.3	4.4
F	0915	-0.8	-0.2	Sa	0918	-2.6	-0.8
	1548	10.1	3.1		1600	10.8	3.3
	2107	4.2	1.3		2115	3.6	1.1
2	0257	12.3	3.7	17	0313	13.7	4.2
Sa	0954	0.0	0.0	Su	1011	-1.9	-0.6
	1627	9.4	2.9		1658	10.4	3.2
	2147	4.9	1.5		2211	4.1	1.2
3	0331	11.5	3.5	18	0408	12.7	3.9
Su	1040	0.9	0.3	M	1104	-1.0	-0.3
	1725	8.8	2.7		1805	10.2	3.1
	2231	5.5	1.7		2317	4.4	1.3
4	0413	10.6	3.2	19	0520	11.5	3.5
M	1130	1.7	0.5	Tu	1205	-0.1	0.0
	1841	8.4	2.6		1916	10.3	3.1
	2328	5.9	1.8				
5	0512	9.7	3.0	20	0031	4.3	1.3
Tu	1228	2.3	0.7	W	0648	10.5	3.2
	1951	8.5	2.6		1307	0.6	0.2
					2016	10.8	3.3
6	0041	5.9	1.8	21	0153	3.7	1.1
W	0655	9.1	2.8	Th	0811	10.0	3.0
	1334	2.5	0.8		1413	1.2	0.4
	2047	9.0	2.7		2111	11.5	3.5
7	0209	5.3	1.6	22	0314	2.5	0.8
Th	0818	9.0	2.7	F	0924	9.9	3.0
	1444	2.4	0.7		1519	1.5	0.5
	2132	9.7	3.0		2154	12.1	3.7
8	0330	4.1	1.2	23	0420	1.1	0.3
F	0924	9.3	2.8	Sa	1028	9.9	3.0
	1540	2.1	0.6		1614	1.8	0.5
	2206	10.5	3.2		2236	12.6	3.8
9	0423	2.6	0.8	24	0510	-0.2	-0.1
Sa	1019	9.7	3.0	Su	1124	10.0	3.0
	1625	1.8	0.5		1700	2.1	0.6
	2241	11.4	3.5		2313	13.0	4.0
10	0505	1.0	0.3	25	0552	-1.1	-0.3
Su	1110	10.2	3.1	M	1216	10.2	3.1
	1707	1.6	0.5		1742	2.4	0.7
	2315	12.3	3.7		2348	13.2	4.0
11	0547	-0.5	-0.2	26	0629	-1.7	-0.5
M	1200	10.7	3.3	Tu	1305	10.4	3.2
	1742	1.5	0.5		1821	2.8	0.9
	2350	13.2	4.0				
12	0624	-1.8	-0.5	27	0021	13.2	4.0
Tu	1246	11.1	3.4	W	0704	-1.9	-0.6
	1821	1.7	0.5		1344	10.4	3.2
					1859	3.3	1.0
13	0025	13.9	4.2	28	0056	13.1	4.0
W	0704	-2.7	-0.8	Th	0742	-1.8	-0.5
	1333	11.3	3.4		1424	10.4	3.2
	1900	2.0	0.6		1935	3.7	1.1
14	0104	14.4	4.4	29	0130	12.9	3.9
Th	0745	-3.1	-0.9	F	0818	-1.4	-0.4
	1419	11.3	3.4		1458	10.3	3.1
	1941	2.5	0.8		2010	4.2	1.3
15	0144	14.6	4.5	30	0204	12.5	3.8
F	0828	-3.1	-0.9	Sa	0857	-0.9	-0.3
	1507	11.2	3.4		1536	10.0	3.0
	2025	3.0	0.9		2049	4.5	1.4
				31	0238	12.1	3.7
				Su	0936	-0.3	-0.1
					1618	9.6	2.9
					2131	4.8	1.5

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0316	11.4	3.5	16	0411	12.7	3.9
M	1016	0.2	0.1	Tu	1048	-1.6	-0.5
	1704	9.3	2.8		1741	11.3	3.4
	2219	5.0	1.5		2309	3.0	0.9
2	0358	10.6	3.2	17	0514	11.4	3.5
Tu	1102	0.8	0.2	W	1139	-0.5	-0.2
	1756	9.1	2.8		1835	11.4	3.5
	2310	5.0	1.5				
3	0453	9.8	3.0	18	0015	2.8	0.9
W	1148	1.3	0.4	Th	0628	10.2	3.1
	1852	9.2	2.8		1232	0.6	0.2
					1930	11.6	3.5
4	0010	4.8	1.5	19	0126	2.4	0.7
Th	0606	9.0	2.7	F	0748	9.3	2.8
	1234	1.7	0.5		1327	1.6	0.5
	1944	9.6	2.9		2021	11.8	3.6
5	0119	4.3	1.3	20	0243	1.8	0.5
F	0729	8.6	2.6	Sa	0900	8.8	2.7
	1327	2.1	0.6		1426	2.6	0.8
	2026	10.2	3.1		2109	12.1	3.7
6	0231	3.3	1.0	21	0353	0.9	0.3
Sa	0839	8.5	2.6	Su	1009	8.7	2.7
	1423	2.5	0.8		1529	3.3	1.0
	2108	10.9	3.3		2153	12.3	3.7
7	0337	2.0	0.6	22	0449	0.0	0.0
Su	0940	8.7	2.7	M	1115	8.9	2.7
	1520	2.7	0.8		1625	3.8	1.2
	2148	11.8	3.6		2235	12.4	3.8
8	0430	0.5	0.2	23	0534	-0.7	-0.2
M	1041	9.2	2.8	Tu	1211	9.3	2.8
	1614	2.9	0.9		1715	4.0	1.2
	2227	12.7	3.9		2318	12.5	3.8
9	0518	-1.0	-0.3	24	0614	-1.1	-0.3
Tu	1136	9.7	3.0	W	1259	9.6	2.9
	1703	3.0	0.9		1758	4.1	1.2
	2308	13.5	4.1		2358	12.6	3.8
10	0603	-2.2	-0.7	25	0651	-1.3	-0.4
W	1233	10.3	3.1	Th	1341	10.0	3.0
	1751	3.0	0.9		1840	4.2	1.3
	2352	14.2	4.3				
11	0646	-3.0	-0.9	26	0036	12.6	3.8
Th	1325	10.8	3.3	F	0728	-1.3	-0.4
	1837	3.0	0.9		1417	10.1	3.1
					1917	4.2	1.3
12	0040	14.6	4.5	27	0115	12.6	3.8
F	0731	-3.5	-1.1	Sa	0803	-1.2	-0.4
	1414	11.1	3.4		1449	10.2	3.1
	1926	3.0	0.9		1956	4.1	1.2
13	0131	14.8	4.5	28	0153	12.4	3.8
Sa	0819	-3.5	-1.1	Su	0841	-1.0	-0.3
	1504	11.3	3.4		1521	10.2	3.1
	2016	3.0	0.9		2035	4.1	1.2
14	0220	14.5	4.4	29	0228	12.1	3.7
Su	0907	-3.1	-0.9	M	0917	-0.8	-0.2
	1554	11.3	3.4		1555	10.1	3.1
	2109	3.1	0.9		2118	4.0	1.2
15	0312	13.8	4.2	30	0307	11.6	3.5
M	0958	-2.5	-0.8	Tu	0952	-0.4	-0.1
	1643	11.3	3.4		1632	10.0	3.0
	2208	3.1	0.9		2200	3.9	1.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0342	10.9	3.3
W	1028	0.0	0.0
	1709	10.0	3.0
	2245	3.8	1.2
2	0427	10.1	3.1
Th	1104	0.6	0.2
	1749	10.1	3.1
	2336	3.5	1.1
3	0524	9.1	2.8
F	1143	1.3	0.4
	1834	10.3	3.1
4	0032	3.1	0.9
Sa	0636	8.4	2.6
	1226	2.1	0.6
	1923	10.7	3.3
5	0135	2.5	0.8
Su	0755	8.0	2.4
	1317	3.0	0.9
	2009	11.3	3.4
6	0246	1.7	0.5
M	0909	8.1	2.5
	1419	3.7	1.1
	2058	12.0	3.7
7	0356	0.5	0.2
Tu	1019	8.5	2.6
	1529	4.2	1.3
	2148	12.8	3.9
8	0452	-0.8	-0.2
W	1124	9.2	2.8
	1634	4.1	1.2
	2241	13.5	4.1
9	0545	-2.0	-0.6
Th	1224	10.0	3.0
	1734	3.7	1.1
	2335	14.2	4.3
10	0633	-2.9	-0.9
F	1316	10.8	3.3
	1825	3.2	1.0
11	0030	14.7	4.5
Sa	0720	-3.4	-1.0
	1405	11.4	3.5
	1916	2.6	0.8
12	0126	14.9	4.5
Su	0806	-3.5	-1.1
	1447	11.9	3.6
	2008	2.1	0.6
13	0218	14.6	4.5
M	0851	-3.3	-1.0
	1531	12.2	3.7
	2101	1.8	0.5
14	0307	13.9	4.2
Tu	0936	-2.6	-0.8
	1616	12.3	3.7
	2155	1.6	0.5
15	0400	12.7	3.9
W	1022	-1.6	-0.5
	1700	12.3	3.7
	2248	1.5	0.5
16	0455	11.3	3.4
Th	1105	-0.3	-0.1
	1749	12.1	3.7
	2349	1.6	0.5
17	0601	9.8	3.0
F	1151	1.1	0.3
	1836	12.0	3.7
18	0050	1.7	0.5
Sa	0717	8.7	2.7
	1241	2.6	0.8
	1931	11.8	3.6
19	0201	1.7	0.5
Su	0836	8.1	2.5
	1337	3.9	1.2
	2024	11.7	3.6
20	0321	1.4	0.4
M	0956	8.1	2.5
	1444	4.8	1.5
	2115	11.6	3.5
21	0429	0.9	0.3
Tu	1107	8.5	2.6
	1559	5.2	1.6
	2206	11.7	3.6
22	0520	0.3	0.1
W	1209	9.0	2.7
	1702	5.1	1.6
	2257	11.9	3.6
23	0601	-0.2	-0.1
Th	1255	9.6	2.9
	1750	4.7	1.4
	2345	12.1	3.7
24	0640	-0.6	-0.2
F	1330	10.0	3.0
	1829	4.3	1.3
25	0027	12.4	3.8
Sa	0714	-0.9	-0.3
	1357	10.4	3.2
	1907	3.8	1.2
26	0106	12.6	3.8
Su	0745	-1.1	-0.3
	1426	10.6	3.2
	1942	3.4	1.0
27	0144	12.6	3.8
M	0817	-1.1	-0.3
	1452	10.8	3.3
	2017	3.0	0.9
28	0216	12.4	3.8
Tu	0849	-1.0	-0.3
	1520	11.0	3.4
	2054	2.7	0.8
29	0252	12.0	3.7
W	0921	-0.7	-0.2
	1549	11.0	3.4
	2134	2.5	0.8
30	0327	11.3	3.4
Th	0953	-0.1	0.0
	1620	11.1	3.4
	2213	2.3	0.7
31	0403	10.4	3.2
F	1025	0.7	0.2
	1648	11.2	3.4
	2301	2.2	0.7

AUGUST

Day	Time h m	Height ft	Height m
1	0450	9.4	2.9
Sa	1100	1.7	0.5
	1725	11.2	3.4
	2353	2.1	0.6
2	0554	8.5	2.6
Su	1139	2.8	0.9
	1815	11.3	3.4
3	0053	2.0	0.6
M	0721	7.9	2.4
	1227	3.9	1.2
	1911	11.5	3.5
4	0205	1.7	0.5
Tu	0850	7.9	2.4
	1334	4.8	1.5
	2021	11.9	3.6
5	0327	0.9	0.3
W	1009	8.5	2.6
	1503	5.2	1.6
	2127	12.6	3.8
6	0436	-0.2	-0.1
Th	1119	9.4	2.9
	1622	4.8	1.5
	2231	13.4	4.1
7	0533	-1.4	-0.4
F	1215	10.4	3.2
	1726	3.8	1.2
	2331	14.1	4.3
8	0622	-2.4	-0.7
Sa	1301	11.3	3.4
	1819	2.6	0.8
9	0027	14.7	4.5
Su	0705	-3.0	-0.9
	1343	12.2	3.7
	1908	1.5	0.5
10	0121	14.9	4.5
M	0747	-3.1	-0.9
	1421	12.8	3.9
	1955	0.7	0.2
11	0208	14.6	4.5
Tu	0828	-2.8	-0.9
	1459	13.2	4.0
	2044	0.2	0.1
12	0255	13.8	4.2
W	0909	-1.9	-0.6
	1536	13.3	4.1
	2131	0.1	0.0
13	0342	12.6	3.8
Th	0949	-0.7	-0.2
	1613	13.1	4.0
	2223	0.3	0.1
14	0432	11.2	3.4
F	1029	0.8	0.2
	1653	12.7	3.9
	2312	0.8	0.2
15	0529	9.7	3.0
Sa	1110	2.3	0.7
	1737	12.1	3.7
16	0011	1.4	0.4
Su	0639	8.6	2.6
	1153	3.9	1.2
	1830	11.4	3.5
17	0115	2.1	0.6
M	0813	8.0	2.4
	1248	5.2	1.6
	1935	10.9	3.3
18	0239	2.3	0.7
Tu	0945	8.1	2.5
	1408	6.1	1.9
	2043	10.8	3.3
19	0406	2.0	0.6
W	1059	8.6	2.6
	1545	6.1	1.9
	2149	11.0	3.4
20	0505	1.4	0.4
Th	1152	9.3	2.8
	1654	5.5	1.7
	2245	11.4	3.5
21	0545	0.7	0.2
F	1228	9.9	3.0
	1739	4.6	1.4
	2336	12.0	3.7
22	0620	0.1	0.0
Sa	1257	10.4	3.2
	1816	3.7	1.1
23	0015	12.4	3.8
Su	0651	-0.4	-0.1
	1322	10.9	3.3
	1850	2.9	0.9
24	0054	12.7	3.9
M	0719	-0.8	-0.2
	1348	11.4	3.5
	1922	2.2	0.7
25	0129	12.8	3.9
Tu	0748	-0.8	-0.2
	1413	11.8	3.6
	1957	1.6	0.5
26	0201	12.6	3.8
W	0817	-0.6	-0.2
	1438	12.1	3.7
	2030	1.2	0.4
27	0233	12.2	3.7
Th	0846	-0.1	0.0
	1503	12.3	3.7
	2105	0.9	0.3
28	0309	11.6	3.5
F	0915	0.6	0.2
	1528	12.4	3.8
	2147	0.9	0.3
29	0343	10.8	3.3
Sa	0947	1.6	0.5
	1557	12.3	3.7
	2229	1.0	0.3
30	0429	9.8	3.0
Su	1024	2.7	0.8
	1629	12.2	3.7
	2318	1.3	0.4
31	0533	8.8	2.7
M	1104	3.9	1.2
	1712	11.9	3.6

SEPTEMBER

Day	Time h m	Height ft	Height m
1	0020	1.7	0.5
Tu	0706	8.2	2.5
	1157	5.0	1.5
	1828	11.6	3.5
2	0136	1.8	0.5
W	0848	8.3	2.5
	1315	5.8	1.8
	2000	11.7	3.6
3	0306	1.4	0.4
Th	1009	9.1	2.8
	1458	5.8	1.8
	2120	12.2	3.7
4	0422	0.4	0.1
F	1107	10.1	3.1
	1622	4.6	1.4
	2230	13.1	4.0
5	0518	-0.8	-0.2
Sa	1153	11.2	3.4
	1721	3.1	0.9
	2329	13.9	4.2
6	0603	-1.6	-0.5
Su	1235	12.3	3.7
	1810	1.5	0.5
7	0023	14.4	4.4
M	0644	-2.1	-0.6
	1312	13.2	4.0
	1856	0.2	0.1
8	0112	14.5	4.4
Tu	0721	-2.0	-0.6
	1346	13.9	4.2
	1940	-0.7	-0.2
9	0156	14.2	4.3
W	0800	-1.5	-0.5
	1420	14.2	4.3
	2023	-1.1	-0.3
10	0240	13.4	4.1
Th	0838	-0.5	-0.2
	1454	14.2	4.3
	2105	-1.0	-0.3
11	0323	12.3	3.7
F	0914	0.8	0.2
	1526	13.8	4.2
	2151	-0.5	-0.2
12	0408	11.1	3.4
Sa	0952	2.3	0.7
	1558	13.1	4.0
	2238	0.4	0.1
13	0458	9.8	3.0
Su	1031	3.8	1.2
	1635	12.1	3.7
	2328	1.5	0.5
14	0609	8.8	2.7
M	1114	5.2	1.6
	1722	11.2	3.4
15	0031	2.5	0.8
Tu	0747	8.3	2.5
	1209	6.3	1.9
	1842	10.3	3.1
16	0150	3.2	1.0
W	0926	8.5	2.6
	1341	6.9	2.1
	2015	10.1	3.1
17	0332	3.0	0.9
Th	1031	9.1	2.8
	1537	6.5	2.0
	2130	10.5	3.2
18	0438	2.3	0.7
F	1114	9.7	3.0
	1642	5.4	1.6
	2230	11.1	3.4
19	0518	1.5	0.5
Sa	1144	10.4	3.2
	1721	4.1	1.2
	2315	11.7	3.6
20	0550	0.8	0.2
Su	1211	11.1	3.4
	1756	2.9	0.9
	2356	12.2	3.7
21	0619	0.3	0.1
M	1237	11.7	3.6
	1827	1.8	0.5
22	0032	12.5	3.8
Tu	0645	0.0	0.0
	1302	12.4	3.8
	1859	0.8	0.2
23	0107	12.7	3.9
W	0712	0.0	0.0
	1329	12.9	3.9
	1932	0.1	0.0
24	0142	12.6	3.8
Th	0741	0.4	0.1
	1354	13.3	4.1
	2004	-0.4	-0.1
25	0218	12.3	3.7
F	0809	1.0	0.3
	1419	13.5	4.1
	2041	-0.5	-0.2
26	0254	11.7	3.6
Sa	0841	1.9	0.6
	1446	13.6	4.1
	2121	-0.3	-0.1
27	0334	11.0	3.4
Su	0916	2.9	0.9
	1513	13.4	4.1
	2204	0.1	0.0
28	0422	10.1	3.1
M	0955	4.0	1.2
	1550	12.9	3.9
	2258	0.8	0.2
29	0532	9.2	2.8
Tu	1044	5.1	1.6
	1637	12.2	3.7
30	0001	1.5	0.5
W	0711	8.8	2.7
	1150	6.0	1.8
	1805	11.5	3.5

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

CORDOVA, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0117	1.9	0.6	16	0229	3.5	1.1
Th	0844	9.2	2.8	F	0939	9.5	2.9
	1319	6.3	1.9		1505	6.4	2.0
	1955	11.3	3.4		2057	9.9	3.0
2	0246	1.7	0.5	17	0343	3.0	0.9
F	0949	10.1	3.1	Sa	1018	10.1	3.1
	1503	5.5	1.7		1614	5.1	1.6
	2121	11.9	3.6		2156	10.4	3.2
3	0401	0.9	0.3	18	0430	2.4	0.7
Sa	1041	11.2	3.4	Su	1049	10.9	3.3
	1620	3.8	1.2		1654	3.6	1.1
	2223	12.6	3.8		2245	11.0	3.4
4	0454	0.1	0.0	19	0505	1.8	0.5
Su	1123	12.3	3.7	M	1118	11.7	3.6
	1713	2.0	0.6		1728	2.2	0.7
	2323	13.2	4.0		2326	11.5	3.5
5	0538	-0.4	-0.1	20	0536	1.4	0.4
M	1201	13.3	4.1	Tu	1147	12.5	3.8
	1758	0.3	0.1		1800	0.9	0.3
6	0012	13.5	4.1	21	0008	11.9	3.6
Tu	0616	-0.6	-0.2	W	0605	1.3	0.4
	1235	14.1	4.3		1215	13.2	4.0
	1840	-1.0	-0.3		1833	-0.3	-0.1
7	0101	13.6	4.1	22	0048	12.1	3.7
W	0652	-0.3	-0.1	Th	0637	1.4	0.4
	1309	14.6	4.5		1243	13.8	4.2
	1921	-1.8	-0.5		1907	-1.1	-0.3
8	0144	13.3	4.1	23	0125	12.2	3.7
Th	0728	0.4	0.1	F	0706	1.8	0.5
	1342	14.8	4.5		1313	14.3	4.4
	2001	-1.9	-0.6		1942	-1.5	-0.5
9	0226	12.7	3.9	24	0206	12.1	3.7
F	0803	1.4	0.4	Sa	0740	2.4	0.7
	1412	14.5	4.4		1343	14.5	4.4
	2041	-1.6	-0.5		2021	-1.6	-0.5
10	0305	12.0	3.7	25	0246	11.7	3.6
Sa	0841	2.6	0.8	Su	0816	3.1	0.9
	1442	14.0	4.3		1415	14.4	4.4
	2122	-0.8	-0.2		2103	-1.3	-0.4
11	0349	11.0	3.4	26	0333	11.2	3.4
Su	0917	3.9	1.2	M	0857	4.0	1.2
	1512	13.2	4.0		1451	14.1	4.3
	2203	0.3	0.1		2150	-0.6	-0.2
12	0435	10.1	3.1	27	0424	10.5	3.2
M	0958	5.1	1.6	Tu	0944	4.9	1.5
	1546	12.2	3.7		1534	13.3	4.1
	2252	1.5	0.5		2243	0.2	0.1
13	0541	9.2	2.8	28	0537	9.9	3.0
Tu	1043	6.1	1.9	W	1039	5.6	1.7
	1627	11.1	3.4		1631	12.3	3.7
	2348	2.6	0.8		2346	1.0	0.3
14	0715	8.8	2.7	29	0703	9.8	3.0
W	1143	6.8	2.1	Th	1154	6.0	1.8
	1743	10.1	3.1		1807	11.3	3.4
15	0058	3.3	1.0	30	0058	1.6	0.5
Th	0844	9.0	2.7	F	0821	10.4	3.2
	1313	7.1	2.2		1324	5.7	1.7
	1935	9.7	3.0		1950	11.0	3.4
				31	0215	1.7	0.5
				Sa	0917	11.2	3.4
					1458	4.5	1.4
					2109	11.2	3.4

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0327	1.5	0.5	16	0319	3.1	0.9
Su	1006	12.2	3.7	M	0951	11.2	3.4
	1607	2.7	0.8		1613	3.2	1.0
	2214	11.6	3.5		2206	9.9	3.0
2	0420	1.3	0.4	17	0406	2.9	0.9
M	1046	13.2	4.0	Tu	1022	12.1	3.7
	1700	0.9	0.3		1655	1.7	0.5
	2310	12.0	3.7		2257	10.4	3.2
3	0506	1.2	0.4	18	0447	2.8	0.9
Tu	1123	14.0	4.3	W	1054	12.9	3.9
	1745	-0.6	-0.2		1731	0.3	0.1
					2345	10.9	3.3
4	0003	12.2	3.7	19	0523	2.8	0.9
W	0545	1.3	0.4	Th	1127	13.7	4.2
	1159	14.5	4.4		1809	-0.9	-0.3
	1825	-1.6	-0.5				
5	0051	12.3	3.7	20	0029	11.3	3.4
Th	0624	1.7	0.5	F	0601	2.9	0.9
	1234	14.8	4.5		1203	14.4	4.4
	1903	-2.1	-0.6		1846	-1.8	-0.5
6	0134	12.2	3.7	21	0114	11.6	3.5
F	0702	2.4	0.7	Sa	0639	3.1	0.9
	1306	14.7	4.5		1240	14.9	4.5
	1942	-2.0	-0.6		1925	-2.3	-0.7
7	0216	12.0	3.7	22	0159	11.8	3.6
Sa	0738	3.2	1.0	Su	0718	3.4	1.0
	1338	14.4	4.4		1317	15.1	4.6
	2020	-1.6	-0.5		2008	-2.3	-0.7
8	0257	11.5	3.5	23	0245	11.7	3.6
Su	0814	4.0	1.2	M	0801	3.9	1.2
	1410	13.8	4.2		1359	14.9	4.5
	2059	-0.8	-0.2		2051	-2.0	-0.6
9	0334	11.0	3.4	24	0333	11.5	3.5
M	0854	4.9	1.5	Tu	0848	4.3	1.3
	1440	13.1	4.0		1445	14.4	4.4
	2141	0.2	0.1		2142	-1.4	-0.4
10	0421	10.3	3.1	25	0426	11.1	3.4
Tu	0934	5.6	1.7	W	0941	4.7	1.4
	1515	12.2	3.7		1534	13.5	4.1
	2224	1.2	0.4		2235	-0.6	-0.2
11	0513	9.7	3.0	26	0528	10.9	3.3
W	1024	6.2	1.9	Th	1043	4.9	1.5
	1558	11.2	3.4		1639	12.3	3.7
	2314	2.1	0.6		2330	0.2	0.1
12	0625	9.4	2.9	27	0636	11.0	3.4
Th	1120	6.6	2.0	F	1154	4.9	1.5
	1700	10.2	3.1		1802	11.2	3.4
13	0009	2.8	0.9	28	0029	1.0	0.3
F	0737	9.4	2.9	Sa	0742	11.4	3.5
	1231	6.5	2.0		1312	4.4	1.3
	1839	9.4	2.9		1931	10.5	3.2
14	0113	3.2	1.0	29	0133	1.8	0.5
Sa	0830	9.8	3.0	Su	0835	12.1	3.7
	1402	5.9	1.8		1436	3.3	1.0
	2005	9.3	2.8		2050	10.2	3.1
15	0220	3.3	1.0	30	0239	2.3	0.7
Su	0914	10.5	3.2	M	0924	12.8	3.9
	1521	4.7	1.4		1550	1.9	0.6
	2111	9.5	2.9		2202	10.3	3.1

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0339	2.7	0.8	16	0252	4.0	1.2
Tu	1007	13.4	4.1	W	0924	12.1	3.7
	1645	0.4	0.1		1615	1.6	0.5
	2302	10.5	3.2		2228	9.2	2.8
2	0433	3.0	0.9	17	0351	4.2	1.3
W	1046	13.9	4.2	Th	1006	12.9	3.9
	1731	-0.7	-0.2		1702	0.2	0.1
	2358	10.8	3.3		2323	9.8	3.0
3	0519	3.3	1.0	18	0444	4.2	1.3
Th	1125	14.2	4.3	F	1049	13.7	4.2
	1811	-1.4	-0.4		1747	-1.0	-0.3
4	0048	11.1	3.4	19	0016	10.5	3.2
F	0601	3.6	1.1	Sa	0532	4.1	1.2
	1203	14.2	4.3		1134	14.4	4.4
	1848	-1.7	-0.5		1829	-2.0	-0.6
5	0131	11.3	3.4	20	0108	11.1	3.4
Sa	0640	4.0	1.2	Su	0617	3.9	1.2
	1239	14.1	4.3		1220	15.0	4.6
	1927	-1.6	-0.5		1912	-2.6	-0.8
6	0213	11.4	3.5	21	0154	11.6	3.5
Su	0720	4.3	1.3	M	0706	3.8	1.2
	1317	13.9	4.2		1306	15.3	4.7
	2004	-1.3	-0.4		1957	-2.9	-0.9
7	0248	11.3	3.4	22	0241	11.9	3.6
M	0758	4.7	1.4	Tu	0752	3.6	1.1
	1350	13.5	4.1		1357	15.2	4.6
	2041	-0.8	-0.2		2041	-2.7	-0.8
8	0326	11.0	3.4	23	0325	12.1	3.7
Tu	0838	5.0	1.5	W	0843	3.5	1.1
	1427	13.0	4.0		1444	14.7	4.5
	2120	-0.1	0.0		2130	-2.3	-0.7
9	0403	10.7	3.3	24	0413	12.1	3.7
W	0918	5.3	1.6	Th	0938	3.4	1.0
	1503	12.3	3.7		1538	13.7	4.2
	2200	0.5	0.2		2219	-1.5	-0.5
10	0447	10.3	3.1	25	0502	12.1	3.7
Th	1003	5.5	1.7	F	1035	3.3	1.0
	1542	11.4	3.5		1635	12.4	3.8
	2243	1.1	0.3		2306	-0.4	-0.1
11	0533	10.1	3.1	26	0557	12.1	3.7
F	1056	5.5	1.7	Sa	1138	3.1	0.9
	1632	10.4	3.2		1743	11.0	3.4
	2324	1.8	0.5		2355	0.8	0.2
12	0625	10.0	3.0	27	0652	12.2	3.7
Sa	1153	5.4	1.6	Su	1247	2.9	0.9
	1739	9.5	2.9		1905	9.8	3.0
13	0010	2.4	0.7	28	0047	2.0	0.6
Su	0716	10.3	3.1	M	0746	12.5	3.8
	1256	4.9	1.5		1401	2.4	0.7
	1902	8.8	2.7		2025	9.2	2.8
14	0057	3.0	0.9	29	0146	3.2	1.0
M	0803	10.7	3.3	Tu	0839	12.7	3.9
	1408	4.2	1.3		1521	1.6	0.5
	2018	8.6	2.6		2145	9.1	2.8
15	0153	3.5	1.1	30	0252	4.2	1.3
Tu	0845	11.4	3.5	W	0929	12.9	3.9
	1521	3.0	0.9		1628	0.6	0.2
	2124	8.8	2.7		2255	9.3	2.8
				31	0401	4.7	1.4
				Th	1015	13.1	4.0
					1718	-0.2	-0.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VALDEZ, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0225	11.3	3.4	16	0232	10.4	3.2
Th	0739	2.7	0.8	F	0748	3.7	1.1
	1341	14.5	4.4		1339	12.5	3.8
	2027	-3.5	-1.1		2026	-1.1	-0.3
2	0308	11.6	3.5	17	0300	10.6	3.2
F	0828	2.5	0.8	Sa	0824	3.5	1.1
	1430	14.0	4.3		1414	12.3	3.7
	2113	-2.9	-0.9		2055	-0.9	-0.3
3	0353	11.7	3.6	18	0328	10.8	3.3
Sa	0922	2.4	0.7	Su	0903	3.3	1.0
	1519	13.1	4.0		1446	11.8	3.6
	2159	-2.0	-0.6		2127	-0.4	-0.1
4	0440	11.7	3.6	19	0353	10.9	3.3
Su	1017	2.5	0.8	M	0940	3.1	0.9
	1614	11.8	3.6		1519	11.1	3.4
	2242	-0.8	-0.2		2159	0.2	0.1
5	0526	11.6	3.5	20	0422	11.1	3.4
M	1113	2.6	0.8	Tu	1024	2.9	0.9
	1713	10.4	3.2		1600	10.3	3.1
	2326	0.6	0.2		2229	1.1	0.3
6	0616	11.5	3.5	21	0457	11.2	3.4
Tu	1214	2.7	0.8	W	1113	2.7	0.8
	1827	9.1	2.8		1652	9.2	2.8
					2308	2.1	0.6
7	0011	2.1	0.6	22	0533	11.2	3.4
W	0706	11.4	3.5	Th	1209	2.5	0.8
	1324	2.6	0.8		1808	8.2	2.5
	1947	8.3	2.5		2351	3.1	0.9
8	0100	3.4	1.0	23	0630	11.3	3.4
Th	0758	11.4	3.5	F	1318	2.1	0.6
	1441	2.3	0.7		1951	7.6	2.3
	2104	8.0	2.4				
9	0203	4.5	1.4	24	0046	4.2	1.3
F	0848	11.3	3.4	Sa	0734	11.5	3.5
	1554	1.7	0.5		1443	1.4	0.4
	2219	8.1	2.5		2125	7.8	2.4
10	0318	5.1	1.6	25	0205	4.9	1.5
Sa	0934	11.4	3.5	Su	0843	11.9	3.6
	1651	0.9	0.3		1605	0.2	0.1
	2325	8.5	2.6		2245	8.4	2.6
11	0424	5.2	1.6	26	0338	5.0	1.5
Su	1023	11.5	3.5	M	0950	12.5	3.8
	1735	0.3	0.1		1708	-1.2	-0.4
					2351	9.3	2.8
12	0017	9.0	2.7	27	0455	4.3	1.3
M	0516	5.0	1.5	Tu	1053	13.1	4.0
	1108	11.8	3.6		1759	-2.4	-0.7
	1813	-0.3	-0.1				
13	0058	9.4	2.9	28	0042	10.2	3.1
Tu	0559	4.6	1.4	W	0553	3.3	1.0
	1151	12.1	3.7		1153	13.8	4.2
	1848	-0.7	-0.2		1846	-3.2	-1.0
14	0133	9.8	3.0	29	0126	11.0	3.4
W	0637	4.2	1.3	Th	0643	2.3	0.7
	1232	12.3	3.7		1247	14.2	4.3
	1922	-1.0	-0.3		1928	-3.5	-1.1
15	0203	10.1	3.1	30	0207	11.7	3.6
Th	0712	3.9	1.2	F	0732	1.5	0.5
	1307	12.5	3.8		1336	14.2	4.3
	1954	-1.2	-0.4		2010	-3.4	-1.0
				31	0245	12.2	3.7
				Sa	0818	1.0	0.3
					1425	13.7	4.2
					2050	-2.7	-0.8

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0322	12.5	3.8	16	0246	11.8	3.6
Su	0906	0.8	0.2	M	0841	1.5	0.5
	1508	12.8	3.9		1434	11.9	3.6
	2129	-1.7	-0.5		2055	-0.3	-0.1
2	0357	12.5	3.8	17	0310	12.1	3.7
M	0953	0.9	0.3	Tu	0919	1.2	0.4
	1556	11.6	3.5		1506	11.3	3.4
	2207	-0.3	-0.1		2125	0.5	0.2
3	0435	12.3	3.7	18	0335	12.2	3.7
Tu	1041	1.2	0.4	W	0959	1.1	0.3
	1644	10.2	3.1		1548	10.4	3.2
	2244	1.2	0.4		2158	1.5	0.5
4	0513	11.8	3.6	19	0404	12.2	3.7
W	1133	1.6	0.5	Th	1046	1.1	0.3
	1745	8.8	2.7		1636	9.2	2.8
	2321	2.7	0.8		2233	2.6	0.8
5	0555	11.3	3.4	20	0441	11.9	3.6
Th	1229	2.1	0.6	F	1139	1.3	0.4
	1903	7.8	2.4		1745	8.1	2.5
					2318	3.8	1.2
6	0003	4.1	1.2	21	0534	11.5	3.5
F	0649	10.7	3.3	Sa	1247	1.5	0.5
	1345	2.5	0.8		1943	7.4	2.3
	2038	7.4	2.3				
7	0059	5.3	1.6	22	0013	4.8	1.5
Sa	0756	10.4	3.2	Su	0656	11.1	3.4
	1517	2.3	0.7		1418	1.3	0.4
	2204	7.5	2.3		2125	7.6	2.3
8	0230	5.9	1.8	23	0144	5.5	1.7
Su	0859	10.3	3.1	M	0826	11.2	3.4
	1631	1.7	0.5		1552	0.4	0.1
	2316	8.1	2.5		2242	8.4	2.6
9	0408	5.8	1.8	24	0336	5.1	1.6
M	1002	10.6	3.2	Tu	0946	11.7	3.6
	1719	0.9	0.3		1658	-0.8	-0.2
					2340	9.5	2.9
10	0004	8.7	2.7	25	0453	3.9	1.2
Tu	0508	5.1	1.6	W	1054	12.5	3.8
	1056	11.0	3.4		1746	-1.9	-0.6
	1759	0.1	0.0				
11	0040	9.3	2.8	26	0025	10.5	3.2
W	0548	4.4	1.3	Th	0548	2.5	0.8
	1141	11.6	3.5		1153	13.2	4.0
	1832	-0.5	-0.2		1829	-2.5	-0.8
12	0109	9.9	3.0	27	0103	11.5	3.5
Th	0625	3.7	1.1	F	0636	1.2	0.4
	1223	12.0	3.7		1242	13.5	4.1
	1901	-1.0	-0.3		1907	-2.7	-0.8
13	0137	10.5	3.2	28	0138	12.4	3.8
F	0658	3.0	0.9	Sa	0720	0.2	0.1
	1255	12.3	3.7		1329	13.5	4.1
	1931	-1.2	-0.4		1944	-2.4	-0.7
14	0202	11.0	3.4				
Sa	0731	2.4	0.7				
	1329	12.4	3.8				
	1958	-1.2	-0.4				
15	0224	11.4	3.5				
Su	0805	1.9	0.6				
	1402	12.3	3.7				
	2025	-0.9	-0.3				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0210	12.9	3.9	16	0141	12.4	3.8
Su	0803	-0.4	-0.1	M	0744	0.3	0.1
	1413	13.1	4.0		1348	12.1	3.7
	2021	-1.6	-0.5		1952	0.0	0.0
2	0242	13.2	4.0	17	0203	12.8	3.9
M	0845	-0.6	-0.2	Tu	0818	-0.2	-0.1
	1452	12.3	3.7		1423	11.8	3.6
	2055	-0.5	-0.2		2024	0.6	0.2
3	0311	13.1	4.0	18	0228	13.1	4.0
Tu	0927	-0.4	-0.1	W	0855	-0.5	-0.2
	1535	11.3	3.4		1500	11.2	3.4
	2129	0.8	0.2		2056	1.5	0.5
4	0342	12.7	3.9	19	0257	13.1	4.0
W	1009	0.2	0.1	Th	0937	-0.5	-0.2
	1617	10.1	3.1		1542	10.3	3.1
	2204	2.2	0.7		2132	2.5	0.8
5	0412	12.0	3.7	20	0329	12.9	3.9
Th	1054	0.9	0.3	F	1025	-0.1	0.0
	1707	8.9	2.7		1636	9.2	2.8
	2239	3.6	1.1		2214	3.5	1.1
6	0449	11.2	3.4	21	0407	12.3	3.7
F	1143	1.8	0.5	Sa	1121	0.4	0.1
	1822	7.8	2.4		1755	8.1	2.5
	2315	4.8	1.5		2302	4.5	1.4
7	0537	10.3	3.1	22	0505	11.4	3.5
Sa	1247	2.6	0.8	Su	1230	1.0	0.3
	2009	7.3	2.2		1947	7.7	2.3
8	0011	5.8	1.8	23	0009	5.3	1.6
Su	0656	9.6	2.9	M	0639	10.7	3.3
	1422	2.9	0.9		1401	1.1	0.3
	2141	7.5	2.3		2119	8.2	2.5
9	0143	6.4	2.0	24	0151	5.5	1.7
M	0827	9.5	2.9	Tu	0824	10.6	3.2
	1557	2.3	0.7		1533	0.6	0.2
	2247	8.1	2.5		2223	9.1	2.8
10	0352	6.0	1.8	25	0339	4.6	1.4
Tu	0941	9.9	3.0	W	0946	11.1	3.4
	1653	1.5	0.5		1634	-0.3	-0.1
	2332	8.8	2.7		2311	10.2	3.1
11	0453	5.0	1.5	26	0447	3.0	0.9
W	1037	10.5	3.2	Th	1050	11.7	3.6
	1730	0.7	0.2		1722	-1.0	-0.3
					2353	11.3	3.4
12	0001	9.5	2.9	27	0538	1.4	0.4
Th	0530	3.9	1.2	F	1144	12.3	3.7
	1122	11.1	3.4		1803	-1.3	-0.4
	1801	0.0	0.0				
13	0029	10.3	3.1	28	0028	12.2	3.7
F	0605	2.9	0.9	Sa	0622	0.1	0.0
	1201	11.6	3.5		1233	12.5	3.8
	1830	-0.4	-0.1		1839	-1.2	-0.4
14	0054	11.0	3.4	29	0100	12.9	3.9
Sa	0637	1.9	0.6	Su	0702	-0.9	-0.3
	1238	12.0	3.7		1318	12.5	3.8
	1855	-0.6	-0.2		1914	-0.7	-0.2
15	0117	11.7	3.6	30	0131	13.4	4.1
Su	0709	1.0	0.3	M	0741	-1.4	-0.4
	1312	12.2	3.7		1358	12.2	3.7
	1924	-0.4	-0.1		1949	0.1	0.0
				31	0159	13.5	4.1
				Tu	0819	-1.4	-0.4
					1436	11.6	3.5
					2022	1.1	0.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VALDEZ, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0229	13.3	4.1	16	0154	13.8	4.2
W	0858	-1.1	-0.3	Th	0839	-1.9	-0.6
	1516	10.8	3.3		1458	10.8	3.3
	2056	2.2	0.7		2034	2.6	0.8
2	0255	12.8	3.9	17	0229	13.6	4.1
Th	0937	-0.4	-0.1	F	0924	-1.6	-0.5
	1556	9.9	3.0		1545	10.1	3.1
	2129	3.3	1.0		2116	3.3	1.0
3	0323	12.0	3.7	18	0305	13.1	4.0
F	1019	0.5	0.2	Sa	1015	-1.1	-0.3
	1644	8.9	2.7		1649	9.2	2.8
	2207	4.4	1.3		2206	4.1	1.2
4	0356	11.1	3.4	19	0353	12.2	3.7
Sa	1107	1.4	0.4	Su	1112	-0.3	-0.1
	1753	8.1	2.5		1814	8.6	2.6
	2249	5.3	1.6		2305	4.8	1.5
5	0438	10.2	3.1	20	0500	11.1	3.4
Su	1203	2.3	0.7	M	1219	0.4	0.1
	1932	7.7	2.3		1944	8.6	2.6
	2344	6.0	1.8				
6	0557	9.3	2.8	21	0021	5.1	1.6
M	1320	2.8	0.9	Tu	0642	10.3	3.1
	2059	7.9	2.4		1338	0.8	0.2
					2054	9.2	2.8
7	0114	6.3	1.9	22	0201	4.8	1.5
Tu	0750	9.0	2.7	W	0820	10.1	3.1
	1456	2.6	0.8		1457	0.7	0.2
	2155	8.4	2.6		2149	10.1	3.1
8	0315	5.8	1.8	23	0333	3.5	1.1
W	0904	9.3	2.8	Th	0934	10.4	3.2
	1602	2.1	0.6		1600	0.5	0.2
	2237	9.2	2.8		2231	11.0	3.4
9	0423	4.7	1.4	24	0437	1.9	0.6
Th	1001	9.8	3.0	F	1037	10.7	3.3
	1644	1.4	0.4		1650	0.3	0.1
	2308	10.0	3.0		2311	11.9	3.6
10	0503	3.4	1.0	25	0524	0.4	0.1
F	1050	10.4	3.2	Sa	1132	11.0	3.4
	1716	1.0	0.3		1731	0.4	0.1
	2335	10.8	3.3		2348	12.6	3.8
11	0538	2.1	0.6	26	0604	-0.7	-0.2
Sa	1133	10.9	3.3	Su	1220	11.2	3.4
	1748	0.7	0.2		1807	0.7	0.2
12	0001	11.7	3.6	27	0020	13.1	4.0
Su	0611	0.8	0.2	M	0643	-1.5	-0.5
	1215	11.3	3.4		1305	11.2	3.4
	1817	0.6	0.2		1842	1.2	0.4
13	0028	12.5	3.8	28	0051	13.3	4.1
M	0643	-0.3	-0.1	Tu	0720	-1.8	-0.5
	1255	11.6	3.5		1346	11.1	3.4
	1848	0.8	0.2		1917	1.9	0.6
14	0056	13.1	4.0	29	0119	13.3	4.1
Tu	0718	-1.2	-0.4	W	0757	-1.7	-0.5
	1334	11.6	3.5		1425	10.7	3.3
	1920	1.2	0.4		1952	2.6	0.8
15	0124	13.6	4.1	30	0148	13.0	4.0
W	0757	-1.7	-0.5	Th	0834	-1.3	-0.4
	1413	11.4	3.5		1503	10.3	3.1
	1956	1.8	0.5		2028	3.4	1.0

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0219	12.5	3.8	16	0214	13.7	4.2
F	0914	-0.7	-0.2	Sa	0916	-2.5	-0.8
	1543	9.7	3.0		1555	10.0	3.0
	2103	4.1	1.2		2111	3.6	1.1
2	0250	11.8	3.6	17	0300	13.0	4.0
Sa	0953	0.1	0.0	Su	1007	-1.9	-0.6
	1629	9.0	2.7		1657	9.6	2.9
	2145	4.8	1.5		2207	4.0	1.2
3	0324	11.0	3.4	18	0358	12.0	3.7
Su	1038	0.9	0.3	M	1104	-1.1	-0.3
	1734	8.4	2.6		1806	9.5	2.9
	2230	5.4	1.6		2310	4.2	1.3
4	0407	10.2	3.1	19	0511	10.9	3.3
M	1129	1.6	0.5	Tu	1203	-0.3	-0.1
	1853	8.2	2.5		1916	9.7	3.0
	2329	5.8	1.8				
5	0511	9.3	2.8	20	0026	4.2	1.3
Tu	1229	2.1	0.6	W	0640	10.0	3.0
	2003	8.4	2.6		1306	0.4	0.1
					2015	10.3	3.1
6	0040	5.8	1.8	21	0152	3.6	1.1
W	0654	8.7	2.7	Th	0806	9.5	2.9
	1333	2.4	0.7		1412	1.0	0.3
	2052	8.9	2.7		2104	10.9	3.3
7	0215	5.3	1.6	22	0312	2.4	0.7
Th	0816	8.7	2.7	F	0917	9.4	2.9
	1440	2.4	0.7		1515	1.5	0.5
	2131	9.6	2.9		2149	11.6	3.5
8	0333	4.2	1.3	23	0418	1.1	0.3
F	0919	9.0	2.7	Sa	1021	9.4	2.9
	1534	2.2	0.7		1608	1.8	0.5
	2205	10.4	3.2		2229	12.1	3.7
9	0421	2.8	0.9	24	0504	-0.1	0.0
Sa	1013	9.4	2.9	Su	1119	9.6	2.9
	1618	2.1	0.6		1655	2.2	0.7
	2234	11.3	3.4		2304	12.5	3.8
10	0504	1.3	0.4	25	0546	-1.0	-0.3
Su	1104	9.9	3.0	M	1211	9.8	3.0
	1658	2.0	0.6		1737	2.5	0.8
	2308	12.1	3.7		2340	12.7	3.9
11	0542	-0.1	0.0	26	0626	-1.5	-0.5
M	1152	10.3	3.1	Tu	1257	10.0	3.0
	1736	2.0	0.6		1816	2.9	0.9
	2338	12.9	3.9				
12	0620	-1.4	-0.4	27	0015	12.8	3.9
Tu	1238	10.7	3.3	W	0703	-1.7	-0.5
	1813	2.1	0.6		1339	10.0	3.0
					1852	3.2	1.0
13	0015	13.5	4.1	28	0047	12.7	3.9
W	0700	-2.3	-0.7	Th	0738	-1.7	-0.5
	1324	10.8	3.3		1418	9.9	3.0
	1854	2.4	0.7		1930	3.6	1.1
14	0051	13.9	4.2	29	0122	12.5	3.8
Th	0742	-2.8	-0.9	F	0817	-1.4	-0.4
	1413	10.8	3.3		1455	9.8	3.0
	1934	2.7	0.8		2005	4.0	1.2
15	0129	14.0	4.3	30	0156	12.1	3.7
F	0827	-2.8	-0.9	Sa	0855	-0.9	-0.3
	1500	10.5	3.2		1535	9.5	2.9
	2019	3.1	0.9		2047	4.3	1.3
				31	0232	11.6	3.5
				Su	0934	-0.4	-0.1
					1617	9.1	2.8
					2127	4.7	1.4

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0306	11.0	3.4	16	0400	12.0	3.7
M	1015	0.1	0.0	Tu	1046	-1.8	-0.5
	1705	8.9	2.7		1739	10.5	3.2
	2215	4.9	1.5		2305	3.0	0.9
2	0348	10.3	3.1	17	0506	10.8	3.3
Tu	1057	0.7	0.2	W	1138	-0.7	-0.2
	1800	8.8	2.7		1837	10.7	3.3
	2305	5.0	1.5				
3	0442	9.5	2.9	18	0011	2.8	0.9
W	1141	1.2	0.4	Th	0622	9.6	2.9
	1854	9.0	2.7		1228	0.5	0.2
					1929	11.0	3.4
4	0006	4.9	1.5	19	0124	2.4	0.7
Th	0554	8.7	2.7	F	0742	8.8	2.7
	1227	1.8	0.5		1322	1.6	0.5
	1942	9.5	2.9		2019	11.3	3.4
5	0113	4.5	1.4	20	0243	1.8	0.5
F	0717	8.2	2.5	Sa	0856	8.4	2.6
	1319	2.3	0.7		1422	2.6	0.8
	2022	10.0	3.0		2105	11.6	3.5
6	0230	3.5	1.1	21	0349	0.9	0.3
Sa	0830	8.2	2.5	Su	1005	8.3	2.5
	1411	2.7	0.8		1525	3.3	1.0
	2101	10.8	3.3		2147	11.8	3.6
7	0336	2.2	0.7	22	0445	0.0	0.0
Su	0936	8.4	2.6	M	1108	8.5	2.6
	1510	3.0	0.9		1623	3.7	1.1
	2138	11.5	3.5		2229	11.9	3.6
8	0426	0.8	0.2	23	0530	-0.6	-0.2
M	1035	8.8	2.7	Tu	1204	8.8	2.7
	1606	3.2	1.0		1712	3.8	1.2
	2218	12.3	3.7		2311	12.0	3.7
9	0512	-0.7	-0.2	24	0612	-1.1	-0.3
Tu	1135	9.3	2.8	W	1254	9.1	2.8
	1658	3.2	1.0		1757	3.9	1.2
	2258	13.0	4.0		2351	12.1	3.7
10	0559	-1.9	-0.6	25	0649	-1.3	-0.4
W	1228	9.8	3.0	Th	1333	9.4	2.9
	1748	3.1	0.9		1836	3.9	1.2
	2343	13.6	4.1				
11	0644	-2.9	-0.9	26	0031	12.1	3.7
Th	1321	10.2	3.1	F	0726	-1.4	-0.4
	1833	3.0	0.9		1409	9.6	2.9
					1914	3.8	1.2
12	0031	14.0	4.3	27	0107	12.1	3.7
F	0730	-3.4	-1.0	Sa	0801	-1.4	-0.4
	1410	10.4	3.2		1444	9.6	2.9
	1922	2.9	0.9		1952	3.9	1.2
13	0120	14.0	4.3	28	0145	12.0	3.7
Sa	0818	-3.5	-1.1	Su	0837	-1.2	-0.4
	1458	10.5	3.2		1519	9.6	2.9
	2013	2.9	0.9		2031	3.9	1.2
14	0209	13.7	4.2	29	0220	11.7	3.6
Su	0906	-3.2	-1.0	M	0913	-0.9	-0.3
	1550	10.5	3.2		1551	9.6	2.9
	2106	2.9	0.9		2110	4.0	1.2
15	0302	13.0	4.0	30	0252	11.2	3.4
M	0956	-2.6	-0.8	Tu	0948	-0.5	-0.2
	1644	10.5	3.2		1627	9.7	3.0
	2204	3.0	0.9		2151	4.0	1.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m
1	0331	10.6	3.2
W	1022	0.1	0.0
	1702	9.7	3.0
	2238	3.9	1.2
2	0409	9.8	3.0
Th	1057	0.8	0.2
	1741	9.9	3.0
	2328	3.7	1.1
3	0505	8.9	2.7
F	1134	1.5	0.5
	1822	10.1	3.1
4	0024	3.4	1.0
Sa	0619	8.2	2.5
	1213	2.4	0.7
	1909	10.5	3.2
5	0127	2.8	0.9
Su	0745	7.7	2.3
	1305	3.2	1.0
	1955	11.0	3.4
6	0243	1.8	0.5
M	0904	7.7	2.3
	1408	3.9	1.2
	2047	11.5	3.5
7	0352	0.6	0.2
Tu	1018	8.1	2.5
	1523	4.2	1.3
	2138	12.2	3.7
8	0451	-0.8	-0.2
W	1124	8.6	2.6
	1632	4.0	1.2
	2234	12.8	3.9
9	0543	-2.0	-0.6
Th	1221	9.3	2.8
	1728	3.5	1.1
	2327	13.4	4.1
10	0633	-3.0	-0.9
F	1314	10.0	3.0
	1823	3.0	0.9
11	0023	13.9	4.2
Sa	0719	-3.6	-1.1
	1400	10.6	3.2
	1914	2.4	0.7
12	0118	14.1	4.3
Su	0805	-3.8	-1.2
	1446	11.0	3.4
	2004	2.0	0.6
13	0208	13.8	4.2
M	0850	-3.5	-1.1
	1528	11.3	3.4
	2057	1.7	0.5
14	0259	13.1	4.0
Tu	0935	-2.7	-0.8
	1612	11.5	3.5
	2151	1.5	0.5
15	0351	12.0	3.7
W	1020	-1.6	-0.5
	1659	11.6	3.5
	2246	1.5	0.5

Day	Time h m	Height ft	Height m
16	0449	10.7	3.3
Th	1102	-0.3	-0.1
	1745	11.5	3.5
	2345	1.6	0.5
17	0555	9.3	2.8
F	1145	1.2	0.4
	1835	11.4	3.5
18	0048	1.7	0.5
Sa	0714	8.3	2.5
	1233	2.6	0.8
	1927	11.3	3.4
19	0201	1.7	0.5
Su	0833	7.8	2.4
	1332	3.8	1.2
	2021	11.1	3.4
20	0323	1.3	0.4
M	0949	7.8	2.4
	1445	4.6	1.4
	2112	11.1	3.4
21	0426	0.8	0.2
Tu	1101	8.1	2.5
	1600	4.9	1.5
	2203	11.2	3.4
22	0517	0.1	0.0
W	1201	8.5	2.6
	1658	4.7	1.4
	2255	11.3	3.4
23	0559	-0.4	-0.1
Th	1243	9.0	2.7
	1746	4.3	1.3
	2340	11.6	3.5
24	0636	-0.8	-0.2
F	1320	9.4	2.9
	1825	3.9	1.2
25	0020	11.9	3.6
Sa	0710	-1.1	-0.3
	1352	9.8	3.0
	1902	3.5	1.1
26	0058	12.1	3.7
Su	0742	-1.3	-0.4
	1419	10.1	3.1
	1937	3.2	1.0
27	0133	12.1	3.7
M	0813	-1.2	-0.4
	1447	10.3	3.1
	2013	3.0	0.9
28	0205	11.9	3.6
Tu	0845	-0.9	-0.3
	1512	10.6	3.2
	2047	2.8	0.9
29	0237	11.6	3.5
W	0913	-0.5	-0.2
	1537	10.7	3.3
	2126	2.7	0.8
30	0310	10.9	3.3
Th	0943	0.2	0.1
	1606	10.9	3.3
	2207	2.6	0.8
31	0348	10.2	3.1
F	1015	1.0	0.3
	1633	11.0	3.4
	2250	2.4	0.7

AUGUST

Day	Time h m	Height ft	Height m
1	0433	9.2	2.8
Sa	1048	2.0	0.6
	1707	11.0	3.4
	2342	2.3	0.7
2	0534	8.2	2.5
Su	1127	3.0	0.9
	1753	11.0	3.4
3	0043	2.1	0.6
M	0709	7.5	2.3
	1213	4.0	1.2
	1859	11.1	3.4
4	0202	1.7	0.5
Tu	0848	7.4	2.3
	1322	4.8	1.5
	2008	11.3	3.4
5	0328	0.8	0.2
W	1009	7.9	2.4
	1454	5.0	1.5
	2117	11.9	3.6
6	0439	-0.5	-0.2
Th	1118	8.7	2.7
	1621	4.4	1.3
	2223	12.6	3.8
7	0532	-1.7	-0.5
F	1213	9.6	2.9
	1724	3.4	1.0
	2325	13.3	4.1
8	0621	-2.7	-0.8
Sa	1257	10.5	3.2
	1815	2.3	0.7
9	0021	13.9	4.2
Su	0704	-3.3	-1.0
	1338	11.4	3.5
	1905	1.4	0.4
10	0113	14.1	4.3
M	0746	-3.3	-1.0
	1417	12.1	3.7
	1954	0.6	0.2
11	0201	13.8	4.2
Tu	0825	-2.8	-0.9
	1455	12.5	3.8
	2042	0.2	0.1
12	0247	13.1	4.0
W	0906	-1.9	-0.6
	1530	12.7	3.9
	2129	0.2	0.1
13	0336	12.0	3.7
Th	0945	-0.6	-0.2
	1607	12.6	3.8
	2220	0.4	0.1
14	0425	10.7	3.3
F	1024	0.9	0.3
	1648	12.1	3.7
	2310	0.9	0.3
15	0526	9.3	2.8
Sa	1105	2.5	0.8
	1733	11.6	3.5

Day	Time h m	Height ft	Height m
16	0006	1.6	0.5
Su	0642	8.2	2.5
	1147	3.9	1.2
	1829	10.9	3.3
17	0115	2.1	0.6
M	0815	7.7	2.3
	1246	5.1	1.6
	1936	10.5	3.2
18	0245	2.2	0.7
Tu	0937	7.8	2.4
	1412	5.8	1.8
	2046	10.4	3.2
19	0408	1.7	0.5
W	1050	8.3	2.5
	1549	5.6	1.7
	2149	10.6	3.2
20	0503	1.0	0.3
Th	1141	8.8	2.7
	1653	5.0	1.5
	2243	11.0	3.4
21	0543	0.4	0.1
F	1220	9.4	2.9
	1736	4.2	1.3
	2328	11.5	3.5
22	0617	-0.2	-0.1
Sa	1249	10.0	3.0
	1810	3.5	1.1
23	0010	11.9	3.6
Su	0646	-0.6	-0.2
	1320	10.5	3.2
	1845	2.8	0.9
24	0044	12.2	3.7
M	0713	-0.7	-0.2
	1342	11.0	3.4
	1917	2.3	0.7
25	0117	12.3	3.7
Tu	0741	-0.6	-0.2
	1405	11.5	3.5
	1950	1.8	0.5
26	0149	12.2	3.7
W	0808	-0.3	-0.1
	1426	11.8	3.6
	2022	1.5	0.5
27	0221	11.9	3.6
Th	0837	0.3	0.1
	1448	12.1	3.7
	2057	1.3	0.4
28	0252	11.3	3.4
F	0905	1.1	0.3
	1511	12.2	3.7
	2136	1.2	0.4
29	0328	10.5	3.2
Sa	0937	2.0	0.6
	1537	12.2	3.7
	2220	1.3	0.4
30	0411	9.6	2.9
Su	1009	3.0	0.9
	1612	12.0	3.7
	2310	1.5	0.5
31	0510	8.5	2.6
M	1052	4.0	1.2
	1657	11.5	3.5

SEPTEMBER

Day	Time h m	Height ft	Height m
1	0012	1.8	0.5
Tu	0700	7.7	2.3
	1145	5.0	1.5
	1808	11.1	3.4
2	0133	1.8	0.5
W	0848	7.8	2.4
	1300	5.6	1.7
	1949	11.1	3.4
3	0310	1.1	0.3
Th	1008	8.5	2.6
	1456	5.4	1.6
	2115	11.6	3.5
4	0423	0.0	0.0
F	1103	9.5	2.9
	1619	4.3	1.3
	2224	12.4	3.8
5	0516	-1.1	-0.3
Sa	1151	10.5	3.2
	1719	2.8	0.9
	2323	13.2	4.0
6	0601	-1.9	-0.6
Su	1229	11.6	3.5
	1809	1.3	0.4
7	0015	13.7	4.2
M	0641	-2.2	-0.7
	1306	12.6	3.8
	1854	0.2	0.1
8	0104	13.8	4.2
Tu	0720	-2.0	-0.6
	1341	13.3	4.1
	1936	-0.6	-0.2
9	0149	13.5	4.1
W	0755	-1.3	-0.4
	1415	13.6	4.1
	2021	-0.9	-0.3
10	0234	12.8	3.9
Th	0833	-0.2	-0.1
	1447	13.6	4.1
	2104	-0.8	-0.2
11	0318	11.9	3.6
F	0909	1.1	0.3
	1519	13.2	4.0
	2148	-0.2	-0.1
12	0404	10.7	3.3
Sa	0948	2.5	0.8
	1551	12.6	3.8
	2235	0.7	0.2
13	0500	9.5	2.9
Su	1027	3.9	1.2
	1630	11.6	3.5
	2327	1.6	0.5
14	0614	8.5	2.6
M	1112	5.1	1.6
	1721	10.7	3.3
15	0032	2.5	0.8
Tu	0752	8.1	2.5
	1211	6.1	1.9
	1850	9.9	3.0

Day	Time h m	Height ft	Height m
16	0159	2.9	0.9
W	0920	8.3	2.5
	1350	6.5	2.0
	2023	9.8	3.0
17	0339	2.6	0.8
Th	1023	8.8	2.7
	1541	6.0	1.8
	2132	10.2	3.1
18	0434	1.9	0.6
F	1106	9.4	2.9
	1639	5.0	1.5
	2224	10.8	3.3
19	0511	1.2	0.4
Sa	1138	10.1	3.1
	1716	4.0	1.2
	2309	11.3	3.4
20	0543	0.7	0.2
Su	1207	10.8	3.3
	1751	2.9	0.9
	2348	11.8	3.6
21	0612	0.4	0.1
M	1232	11.5	3.5
	1823	2.0	0.6
22	0023	12.1	3.7
Tu	0639	0.3	0.1
	1254	12.1	3.7
	1852	1.2	0.4
23	0057	12.3	3.7
W	0704	0.5	0.2
	1317	12.7	3.9
	1924	0.6	0.2
24	0131	12.2	3.7
Th	0733	0.9	0.3
	1339	13.1	4.0
	1958	0.2	0.1
25	0204	12.0	3.7
F	0802	1.6	0.5
	1404	13.3	4.1
	2034	0.0	0.0
26	0239	11.5	3.5
Sa	0833	2.4	0.7
	1429	13.4	4.1
	2113	0.1	0.0
27	0319	10.7	3.3
Su	0906	3.3	1.0
	1458	13.1	4.0
	2159	0.4	0.1
28	0404	9.7	3.0
M	0945	4.2	1.3
	1535	12.6	3.8
	2249	0.9	0.3
29	0517	8.7	2.7
Tu	1033	5.1	1.6
	1625	11.8	3.6
	2355	1.5	0.5
30	0709	8.2	2.5
W	1139	5.8	1.8
	1750	11.0	3.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

VALDEZ, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0116	1.7	0.5
Th	0846	8.7	2.7
	1314	6.0	1.8
	1947	10.8	3.3
2	0248	1.4	0.4
F	0951	9.5	2.9
	1502	5.2	1.6
	2113	11.3	3.4
3	0402	0.6	0.2
Sa	1037	10.6	3.2
	1618	3.6	1.1
	2219	12.0	3.7
4	0451	-0.1	0.0
Su	1119	11.7	3.6
	1711	1.9	0.6
	2316	12.6	3.8
5	0533	-0.5	-0.2
M	1155	12.8	3.9
	1757	0.3	0.1
6	0006	13.0	4.0
Tu	0612	-0.5	-0.2
	1229	13.6	4.1
	1839	-0.8	-0.2
7	0053	13.0	4.0
W	0649	-0.1	0.0
	1302	14.1	4.3
	1920	-1.5	-0.5
8	0138	12.8	3.9
Th	0726	0.7	0.2
	1334	14.3	4.4
	1959	-1.6	-0.5
9	0220	12.3	3.7
F	0801	1.7	0.5
	1405	14.1	4.3
	2038	-1.2	-0.4
10	0302	11.5	3.5
Sa	0837	2.8	0.9
	1434	13.5	4.1
	2120	-0.4	-0.1
11	0343	10.6	3.2
Su	0915	3.9	1.2
	1506	12.7	3.9
	2204	0.5	0.2
12	0436	9.7	3.0
M	0955	5.0	1.5
	1542	11.7	3.6
	2251	1.6	0.5
13	0550	8.9	2.7
Tu	1043	5.9	1.8
	1625	10.7	3.3
	2350	2.5	0.8
14	0727	8.6	2.6
W	1145	6.6	2.0
	1752	9.7	3.0
15	0107	3.1	0.9
Th	0843	8.8	2.7
	1319	6.7	2.0
	1943	9.4	2.9

Day	Time	Height	
	h m	ft	m
16	0233	3.1	0.9
F	0938	9.4	2.9
	1509	6.1	1.9
	2056	9.7	3.0
17	0342	2.7	0.8
Sa	1017	10.0	3.0
	1610	4.9	1.5
	2154	10.2	3.1
18	0424	2.2	0.7
Su	1047	10.8	3.3
	1651	3.7	1.1
	2240	10.7	3.3
19	0459	1.9	0.6
M	1114	11.6	3.5
	1725	2.4	0.7
	2322	11.2	3.4
20	0528	1.7	0.5
Tu	1139	12.3	3.7
	1757	1.3	0.4
21	0001	11.6	3.5
W	0600	1.7	0.5
	1204	13.0	4.0
	1828	0.2	0.1
22	0038	11.8	3.6
Th	0628	1.9	0.6
	1232	13.6	4.1
	1901	-0.5	-0.2
23	0116	11.9	3.6
F	0700	2.3	0.7
	1258	14.0	4.3
	1937	-1.0	-0.3
24	0156	11.7	3.6
Sa	0732	2.8	0.9
	1328	14.2	4.3
	2014	-1.2	-0.4
25	0235	11.3	3.4
Su	0807	3.5	1.1
	1400	14.1	4.3
	2055	-1.0	-0.3
26	0319	10.6	3.2
M	0847	4.2	1.3
	1437	13.6	4.1
	2143	-0.5	-0.2
27	0415	9.9	3.0
Tu	0935	4.8	1.5
	1519	12.9	3.9
	2241	0.2	0.1
28	0534	9.2	2.8
W	1033	5.5	1.7
	1619	11.8	3.6
	2345	0.9	0.3
29	0707	9.2	2.8
Th	1146	5.8	1.8
	1752	10.8	3.3
30	0055	1.3	0.4
F	0823	9.8	3.0
	1321	5.5	1.7
	1942	10.5	3.2
31	0214	1.5	0.5
Sa	0916	10.7	3.3
	1457	4.3	1.3
	2101	10.7	3.3

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0323	1.3	0.4
Su	1000	11.7	3.6
	1606	2.6	0.8
	2208	11.1	3.4
2	0416	1.2	0.4
M	1039	12.6	3.8
	1658	1.0	0.3
	2306	11.5	3.5
3	0501	1.2	0.4
Tu	1116	13.4	4.1
	1741	-0.4	-0.1
	2357	11.7	3.6
4	0543	1.5	0.5
W	1151	14.0	4.3
	1823	-1.4	-0.4
5	0044	11.8	3.6
Th	0620	1.9	0.6
	1225	14.2	4.3
	1859	-1.8	-0.5
6	0129	11.8	3.6
F	0657	2.5	0.8
	1258	14.2	4.3
	1937	-1.7	-0.5
7	0210	11.5	3.5
Sa	0733	3.2	1.0
	1331	13.9	4.2
	2018	-1.3	-0.4
8	0251	11.1	3.4
Su	0812	4.0	1.2
	1403	13.3	4.1
	2057	-0.6	-0.2
9	0333	10.5	3.2
M	0850	4.7	1.4
	1435	12.6	3.8
	2140	0.3	0.1
10	0419	9.8	3.0
Tu	0932	5.4	1.6
	1511	11.7	3.6
	2225	1.1	0.3
11	0522	9.3	2.8
W	1022	5.9	1.8
	1555	10.8	3.3
	2315	1.9	0.6
12	0637	9.1	2.8
Th	1120	6.3	1.9
	1701	9.8	3.0
13	0011	2.6	0.8
F	0743	9.3	2.8
	1234	6.3	1.9
	1839	9.2	2.8
14	0115	3.0	0.9
Sa	0835	9.7	3.0
	1404	5.8	1.8
	2003	9.1	2.8
15	0219	3.2	1.0
Su	0915	10.4	3.2
	1523	4.7	1.4
	2109	9.3	2.8

Day	Time	Height	
	h m	ft	m
16	0315	3.2	1.0
M	0946	11.1	3.4
	1611	3.4	1.0
	2202	9.6	2.9
17	0400	3.2	1.0
Tu	1018	11.9	3.6
	1653	2.0	0.6
	2251	10.1	3.1
18	0439	3.1	0.9
W	1047	12.6	3.8
	1728	0.7	0.2
	2338	10.5	3.2
19	0517	3.2	1.0
Th	1119	13.3	4.1
	1804	-0.5	-0.2
20	0023	10.9	3.3
F	0553	3.2	1.0
	1153	13.9	4.2
	1840	-1.4	-0.4
21	0108	11.1	3.4
Sa	0631	3.4	1.0
	1227	14.3	4.4
	1921	-1.9	-0.6
22	0151	11.2	3.4
Su	0711	3.6	1.1
	1305	14.5	4.4
	2003	-2.1	-0.6
23	0236	11.0	3.4
M	0754	3.9	1.2
	1347	14.3	4.4
	2049	-2.0	-0.6
24	0327	10.7	3.3
Tu	0842	4.2	1.3
	1431	13.8	4.2
	2137	-1.5	-0.5
25	0422	10.3	3.1
W	0936	4.5	1.4
	1522	12.9	3.9
	2233	-0.8	-0.2
26	0529	10.1	3.1
Th	1036	4.7	1.4
	1625	11.7	3.6
	2328	0.0	0.0
27	0636	10.3	3.1
F	1147	4.7	1.4
	1751	10.6	3.2
28	0026	0.9	0.3
Sa	0738	10.8	3.3
	1309	4.2	1.3
	1926	9.9	3.0
29	0128	1.6	0.5
Su	0832	11.5	3.5
	1435	3.2	1.0
	2046	9.7	3.0
30	0235	2.2	0.7
M	0917	12.2	3.7
	1545	1.8	0.5
	2154	9.8	3.0

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0336	2.7	0.8
Tu	1002	12.8	3.9
	1642	0.5	0.2
	2255	10.0	3.0
2	0429	3.0	0.9
W	1040	13.2	4.0
	1727	-0.6	-0.2
	2351	10.3	3.1
3	0517	3.3	1.0
Th	1119	13.5	4.1
	1808	-1.3	-0.4
4	0040	10.6	3.2
F	0559	3.5	1.1
	1156	13.6	4.1
	1846	-1.6	-0.5
5	0126	10.7	3.3
Sa	0638	3.7	1.1
	1233	13.5	4.1
	1925	-1.6	-0.5
6	0208	10.7	3.3
Su	0717	4.0	1.2
	1310	13.3	4.1
	2002	-1.3	-0.4
7	0245	10.6	3.2
M	0755	4.3	1.3
	1344	12.9	3.9
	2040	-0.9	-0.3
8	0322	10.3	3.1
Tu	0834	4.6	1.4
	1421	12.4	3.8
	2119	-0.3	-0.1
9	0403	10.1	3.1
W	0916	4.9	1.5
	1455	11.8	3.6
	2159	0.3	0.1
10	0449	9.8	3.0
Th	1001	5.2	1.6
	1535	11.0	3.4
	2238	1.0	0.3
11	0537	9.7	3.0
F	1052	5.3	1.6
	1622	10.0	3.0
	2320	1.7	0.5
12	0627	9.8	3.0
Sa	1149	5.3	1.6
	1726	9.1	2.8
13	0002	2.4	0.7
Su	0716	10.0	3.0
	1256	5.0	1.5
	1854	8.5	2.6
14	0049	3.1	0.9
M	0758	10.5	3.2
	1406	4.3	1.3
	2014	8.3	2.5
15	0141	3.7	1.1
Tu	0840	11.1	3.4
	1519	3.1	0.9
	2123	8.4	2.6

Day	Time	Height	
	h m	ft	m
16	0244	4.2	1.3
W	0919	11.7	3.6
	1613	1.8	0.5
	2224	8.8	2.7
17	0344	4.3	1.3
Th	0957	12.4	3.8
	1659	0.4	0.1
	2322	9.4	2.9
18	0439	4.3	1.3
F	1039	13.1	4.0
	1742	-0.9	-0.3
19	0015	9.9	3.0
Sa	0527	4.1	1.2
	1123	13.7	4.2
	1826	-1.9	-0.6
20	0103	10.4	3.2
Su	0612	3.8	1.2
	1209	14.2	4.3
	1910	-2.6	-0.8
21	0149	10.8	3.3
M	0701	3.6	1.1
	1257	14.4	4.4
	1954	-3.0	-0.9
22	0234	11.0	3.4
Tu	0747	3.4	1.0
	1345	14.4	4.4
	2039	-2.9	-0.9
23	0322	11.1	3.4
W	0839	3.2	1.0
	1434	13.9	4.2
	2127	-2.5	-0.8
24	0409	11.2	3.4
Th	0933	3.2	1.0
	1527	12.9	3.9
	2214	-1.7	-0.5
25	0500	11.2	3.4
F	1030	3.1	0.9
	1625	11.7	3.6
	2301	-0.6	-0.2
26	0552	11.3	3.4
Sa	1134	3.0	0.9
	1738	10.3	3.1
	2350	0.7	0.2
27	0648	11.5	3.5
Su	1243	2.8	0.9
	1901	9.2	2.8
28	0043	2.0	0.6
M	0742	11.8	3.6
	1400	2.3	0.7
	2024	8.7	2.7
29	0142	3.2	1.0
Tu	0833	12.0	3.7
	1518	1.5	0.5
	2141	8.6	2.6
30	0251	4.0	1.2
W	0923	12.2	3.7
	1624	0.5	0.2
	2251	8.8	2.7
31	0400	4.4	1.3
Th	1010	12.3	3.7
	1714	-0.3	-0.1
	2353	9.2	2.8

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m
1	0324	19.4	5.9
Th	0859	2.0	0.6
	1458	21.8	6.6
	2135	-5.3	-1.6
2	0409	19.7	6.0
F	0948	1.6	0.5
	1548	21.2	6.5
	2220	-4.6	-1.4
3	0455	19.6	6.0
Sa	1038	1.7	0.5
	1639	20.0	6.1
	2305	-3.1	-0.9
4	0540	19.1	5.8
Su	1132	2.0	0.6
	1732	18.3	5.6
	2351	-1.2	-0.4
5	0627	18.5	5.6
M	1227	2.5	0.8
	1827	16.3	5.0
6	0038	1.0	0.3
Tu	0713	17.7	5.4
	1329	3.1	0.9
	1929	14.5	4.4
7	0128	3.2	1.0
W	0803	16.8	5.1
	1436	3.3	1.0
	2043	13.1	4.0
8	0227	5.1	1.6
Th	0855	16.2	4.9
	1551	3.2	1.0
	2209	12.5	3.8
9	0334	6.5	2.0
F	0952	15.7	4.8
	1701	2.6	0.8
	2333	12.9	3.9
10	0443	7.2	2.2
Sa	1051	15.7	4.8
	1757	1.8	0.5
11	0039	13.8	4.2
Su	0544	7.1	2.2
	1144	16.0	4.9
	1844	0.9	0.3
12	0124	14.7	4.5
M	0634	6.6	2.0
	1232	16.6	5.1
	1924	0.1	0.0
13	0200	15.6	4.8
Tu	0719	5.9	1.8
	1314	17.3	5.3
	1959	-0.7	-0.2
14	0233	16.3	5.0
W	0757	5.2	1.6
	1353	18.0	5.5
	2031	-1.2	-0.4
15	0307	16.9	5.2
Th	0833	4.5	1.4
	1430	18.5	5.6
	2104	-1.6	-0.5
16	0335	17.4	5.3
F	0910	4.0	1.2
	1507	18.6	5.7
	2136	-1.6	-0.5
17	0407	17.6	5.4
Sa	0946	3.7	1.1
	1542	18.4	5.6
	2208	-1.3	-0.4
18	0439	17.7	5.4
Su	1021	3.6	1.1
	1618	17.8	5.4
	2239	-0.6	-0.2
19	0508	17.6	5.4
M	1058	3.5	1.1
	1655	16.9	5.2
	2312	0.4	0.1
20	0539	17.4	5.3
Tu	1137	3.5	1.1
	1737	15.7	4.8
	2345	1.7	0.5
21	0612	17.2	5.2
W	1224	3.5	1.1
	1830	14.4	4.4
22	0027	3.3	1.0
Th	0651	16.9	5.2
	1321	3.5	1.1
	1932	13.2	4.0
23	0118	4.9	1.5
F	0739	16.6	5.1
	1432	3.2	1.0
	2057	12.4	3.8
24	0223	6.3	1.9
Sa	0840	16.5	5.0
	1550	2.3	0.7
	2232	12.7	3.9
25	0349	6.9	2.1
Su	0955	16.8	5.1
	1709	0.8	0.2
	2355	14.0	4.3
26	0509	6.4	2.0
M	1107	17.7	5.4
	1810	-1.1	-0.3
27	0058	15.8	4.8
Tu	0615	5.1	1.6
	1215	19.0	5.8
	1906	-3.0	-0.9
28	0146	17.5	5.3
W	0711	3.4	1.0
	1312	20.4	6.2
	1953	-4.4	-1.3
29	0228	19.0	5.8
Th	0803	1.8	0.5
	1404	21.4	6.5
	2037	-5.2	-1.6
30	0310	20.1	6.1
F	0850	0.6	0.2
	1453	21.8	6.6
	2120	-5.2	-1.6
31	0349	20.7	6.3
Sa	0935	-0.2	-0.1
	1540	21.5	6.6
	2159	-4.4	-1.3

FEBRUARY

Day	Time h m	Height ft	Height m
1	0427	20.8	6.3
Su	1021	-0.4	-0.1
	1626	20.4	6.2
	2239	-2.9	-0.9
2	0503	20.4	6.2
M	1106	0.0	0.0
	1711	18.7	5.7
	2316	-0.8	-0.2
3	0540	19.5	5.9
Tu	1152	0.9	0.3
	1759	16.7	5.1
	2356	1.6	0.5
4	0617	18.2	5.5
W	1241	2.0	0.6
	1849	14.6	4.5
5	0036	4.0	1.2
Th	0657	16.8	5.1
	1339	3.1	0.9
	1952	12.8	3.9
6	0121	6.2	1.9
F	0742	15.4	4.7
	1449	4.0	1.2
	2121	11.6	3.5
7	0230	7.9	2.4
Sa	0842	14.3	4.4
	1622	4.1	1.2
	2318	11.8	3.6
8	0403	8.7	2.7
Su	1006	13.9	4.2
	1741	3.3	1.0
9	0032	12.9	3.9
M	0530	8.2	2.5
	1122	14.4	4.4
	1831	2.2	0.7
10	0116	14.1	4.3
Tu	0627	7.2	2.2
	1221	15.5	4.7
	1910	1.0	0.3
11	0147	15.3	4.7
W	0709	5.9	1.8
	1305	16.7	5.1
	1945	-0.1	0.0
12	0215	16.4	5.0
Th	0746	4.6	1.4
	1344	17.8	5.4
	2014	-1.0	-0.3
13	0241	17.4	5.3
F	0819	3.4	1.0
	1419	18.7	5.7
	2043	-1.6	-0.5
14	0308	18.3	5.6
Sa	0851	2.4	0.7
	1452	19.2	5.9
	2111	-1.8	-0.5
15	0335	18.9	5.8
Su	0925	1.7	0.5
	1528	19.2	5.9
	2142	-1.5	-0.5
16	0401	19.2	5.9
M	0959	1.2	0.4
	1602	18.7	5.7
	2210	-0.8	-0.2
17	0428	19.3	5.9
Tu	1033	0.9	0.3
	1639	17.9	5.5
	2242	0.4	0.1
18	0457	19.0	5.8
W	1110	1.0	0.3
	1719	16.6	5.1
	2316	1.9	0.6
19	0527	18.5	5.6
Th	1151	1.3	0.4
	1806	15.1	4.6
	2356	3.6	1.1
20	0606	17.8	5.4
F	1244	1.9	0.6
	1905	13.4	4.1
21	0043	5.4	1.6
Sa	0654	16.8	5.1
	1352	2.4	0.7
	2034	12.3	3.7
22	0154	7.0	2.1
Su	0803	15.9	4.8
	1525	2.4	0.7
	2225	12.5	3.8
23	0331	7.5	2.3
M	0933	15.8	4.8
	1656	1.2	0.4
	2354	14.0	4.3
24	0503	6.5	2.0
Tu	1102	16.7	5.1
	1805	-0.6	-0.2
25	0047	15.9	4.8
W	0613	4.6	1.4
	1215	18.3	5.6
	1855	-2.3	-0.7
26	0132	17.8	5.4
Th	0706	2.4	0.7
	1311	19.9	6.1
	1940	-3.6	-1.1
27	0209	19.5	5.9
F	0753	0.4	0.1
	1359	21.0	6.4
	2020	-4.2	-1.3
28	0245	20.7	6.3
Sa	0835	-1.1	-0.3
	1444	21.5	6.6
	2057	-4.0	-1.2

MARCH

Day	Time h m	Height ft	Height m
1	0320	21.4	6.5
Su	0917	-1.9	-0.6
	1525	21.2	6.5
	2133	-3.1	-0.9
2	0352	21.4	6.5
M	0957	-2.0	-0.6
	1606	20.2	6.2
	2207	-1.6	-0.5
3	0425	20.8	6.3
Tu	1036	-1.5	-0.5
	1647	18.7	5.7
	2242	0.4	0.1
4	0455	19.7	6.0
W	1115	-0.3	-0.1
	1729	16.8	5.1
	2319	2.6	0.8
5	0527	18.2	5.5
Th	1157	1.2	0.4
	1814	14.7	4.5
	2351	4.8	1.5
6	0601	16.5	5.0
F	1243	2.8	0.9
	1909	12.8	3.9
7	0033	6.8	2.1
Sa	0640	14.9	4.5
	1346	4.3	1.3
	2032	11.4	3.5
8	0134	8.5	2.6
Su	0739	13.4	4.1
	1529	5.0	1.5
	2254	11.3	3.4
9	0327	9.2	2.8
M	0916	12.7	3.9
	1712	4.3	1.3
10	0011	12.5	3.8
Tu	0517	8.4	2.6
	1059	13.3	4.1
	1812	3.0	0.9
11	0053	13.8	4.2
W	0615	6.9	2.1
	1205	14.7	4.5
	1845	1.7	0.5
12	0117	15.2	4.6
Th	0652	5.2	1.6
	1247	16.2	4.9
	1914	0.5	0.2
13	0140	16.6	5.1
F	0722	3.6	1.1
	1324	17.5	5.3
	1943	-0.4	-0.1
14	0205	17.9	5.5
Sa	0755	2.0	0.6
	1359	18.6	5.7
	2012	-1.0	-0.3
15	0230	19.0	5.8
Su	0827	0.6	0.2
	1433	19.3	5.9
	2041	-1.1	-0.3
16	0255	19.8	6.0
M	0859	-0.5	-0.2
	1509	19.5	5.9
	2110	-0.8	-0.2
17	0322	20.3	6.2
Tu	0933	-1.2	-0.4
	1546	19.2	5.9
	2143	-0.1	0.0
18	0351	20.3	6.2
W	1007	-1.5	-0.5
	1623	18.3	5.6
	2217	1.1	0.3
19	0420	20.0	6.1
Th	1044	-1.3	-0.4
	1706	17.0	5.2
	2252	2.6	0.8
20	0455	19.2	5.9
F	1129	-0.5	-0.2
	1756	15.3	4.7
	2335	4.3	1.3
21	0537	17.9	5.5
Sa	1225	0.6	0.2
	1902	13.6	4.1
22	0030	5.9	1.8
Su	0633	16.5	5.0
	1336	1.8	0.5
	2033	12.6	3.8
23	0150	7.2	2.2
M	0751	15.2	4.6
	1510	2.1	0.6
	2216	13.0	4.0
24	0334	7.1	2.2
Tu	0931	15.0	4.6
	1643	1.2	0.4
	2333	14.6	4.5
25	0502	5.5	1.7
W	1101	16.0	4.9
	1746	-0.2	-0.1
26	0024	16.5	5.0
Th	0605	3.2	1.0
	1208	17.6	5.4
	1835	-1.4	-0.4
27	0103	18.3	5.6
F	0655	0.9	0.3
	1301	19.0	5.8
	1917	-2.1	-0.6
28	0140	19.8	6.0
Sa	0737	-1.1	-0.3
	1348	20.0	6.1
	1953	-2.3	-0.7
29	0212	20.8	6.3
Su	0818	-2.4	-0.7
	1430	20.4	6.2
	2029	-1.9	-0.6
30	0244	21.3	6.5
M	0854	-3.0	-0.9
	1509	20.1	6.1
	2104	-1.0	-0.3
31	0314	21.1	6.4
Tu	0932	-3.0	-0.9
	1546	19.4	5.9
	2138	0.4	0.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0345	20.4	6.2	16	0317	20.7	6.3
W	1007	-2.2	-0.7	Th	0946	-3.4	-1.0
	1626	18.1	5.5		1613	18.2	5.5
	2213	2.0	0.6		2155	2.0	0.6
2	0415	19.2	5.9	17	0353	20.2	6.2
Th	1044	-1.0	-0.3	F	1029	-2.9	-0.9
	1703	16.5	5.0		1703	16.9	5.2
	2245	3.7	1.1		2238	3.3	1.0
3	0444	17.7	5.4	18	0435	19.1	5.8
F	1121	0.6	0.2	Sa	1116	-1.8	-0.5
	1748	14.7	4.5		1756	15.5	4.7
	2321	5.5	1.7		2327	4.6	1.4
4	0519	16.1	4.9	19	0524	17.7	5.4
Sa	1203	2.3	0.7	Su	1214	-0.4	-0.1
	1839	13.0	4.0		1905	14.2	4.3
5	0001	7.1	2.2	20	0033	5.8	1.8
Su	0556	14.4	4.4	M	0628	16.0	4.9
	1257	3.8	1.2		1329	0.8	0.2
	1956	11.7	3.6		2028	13.7	4.2
6	0105	8.4	2.6	21	0155	6.4	2.0
M	0657	12.9	3.9	Tu	0753	14.8	4.5
	1427	4.8	1.5		1453	1.4	0.4
	2151	11.5	3.5		2151	14.3	4.4
7	0252	9.0	2.7	22	0331	5.7	1.7
Tu	0833	12.1	3.7	W	0929	14.5	4.4
	1614	4.6	1.4		1614	1.2	0.4
	2315	12.4	3.8		2259	15.6	4.8
8	0440	8.0	2.4	23	0451	3.8	1.2
W	1022	12.6	3.8	Th	1051	15.3	4.7
	1717	3.6	1.1		1717	0.6	0.2
	2357	13.7	4.2		2346	17.1	5.2
9	0541	6.3	1.9	24	0549	1.6	0.5
Th	1130	13.8	4.2	F	1157	16.5	5.0
	1758	2.6	0.8		1803	0.2	0.1
10	0026	15.2	4.6	25	0029	18.4	5.6
F	0618	4.4	1.3	Sa	0635	-0.3	-0.1
	1218	15.3	4.7		1247	17.6	5.4
	1831	1.6	0.5		1847	0.0	0.0
11	0052	16.6	5.1	26	0103	19.5	5.9
Sa	0652	2.4	0.7	Su	0717	-1.9	-0.6
	1258	16.7	5.1		1332	18.3	5.6
	1902	0.8	0.2		1924	0.2	0.1
12	0116	18.1	5.5	27	0137	20.1	6.1
Su	0724	0.5	0.2	M	0756	-2.9	-0.9
	1335	17.9	5.5		1415	18.6	5.7
	1934	0.3	0.1		2002	0.7	0.2
13	0145	19.3	5.9	28	0207	20.3	6.2
M	0757	-1.1	-0.3	Tu	0832	-3.3	-1.0
	1412	18.8	5.7		1452	18.6	5.7
	2006	0.2	0.1		2037	1.4	0.4
14	0213	20.2	6.2	29	0239	20.0	6.1
Tu	0832	-2.4	-0.7	W	0907	-3.0	-0.9
	1452	19.1	5.8		1530	18.0	5.5
	2041	0.5	0.2		2109	2.3	0.7
15	0244	20.7	6.3	30	0311	19.4	5.9
W	0907	-3.2	-1.0	Th	0942	-2.3	-0.7
	1530	18.9	5.8		1607	17.2	5.2
	2117	1.1	0.3		2146	3.4	1.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0341	18.3	5.6	16	0338	20.2	6.2
F	1017	-1.2	-0.4	Sa	1020	-4.0	-1.2
	1647	16.0	4.9		1659	17.1	5.2
	2221	4.6	1.4		2231	3.3	1.0
2	0415	17.1	5.2	17	0428	19.1	5.8
Sa	1055	0.1	0.0	Su	1111	-2.9	-0.9
	1732	14.7	4.5		1756	16.2	4.9
	2300	5.8	1.8		2327	4.1	1.2
3	0450	15.7	4.8	18	0524	17.6	5.4
Su	1137	1.5	0.5	M	1209	-1.6	-0.5
	1825	13.4	4.1		1857	15.6	4.8
	2345	6.9	2.1				
4	0535	14.3	4.4	19	0033	4.7	1.4
M	1228	2.8	0.9	Tu	0631	16.1	4.9
	1926	12.5	3.8		1313	-0.2	-0.1
					2006	15.3	4.7
5	0046	7.8	2.4	20	0151	4.7	1.4
Tu	0635	13.0	4.0	W	0747	14.8	4.5
	1334	3.8	1.2		1424	0.9	0.3
	2040	12.3	3.7		2112	15.6	4.8
6	0211	8.0	2.4	21	0314	3.9	1.2
W	0755	12.1	3.7	Th	0913	14.3	4.4
	1452	4.2	1.3		1533	1.6	0.5
	2149	12.9	3.9		2211	16.4	5.0
7	0344	7.2	2.2	22	0426	2.4	0.7
Th	0924	12.1	3.7	F	1032	14.5	4.4
	1600	4.0	1.2		1635	2.0	0.6
	2241	13.9	4.2		2302	17.2	5.2
8	0448	5.6	1.7	23	0525	0.8	0.2
F	1040	13.0	4.0	Sa	1138	15.1	4.6
	1653	3.5	1.1		1728	2.3	0.7
	2318	15.2	4.6		2346	18.0	5.5
9	0534	3.6	1.1	24	0614	-0.7	-0.2
Sa	1138	14.2	4.3	Su	1232	15.8	4.8
	1738	3.0	0.9		1813	2.5	0.8
	2352	16.6	5.1				
10	0614	1.5	0.5	25	0026	18.5	5.6
Su	1226	15.6	4.8	M	0656	-1.7	-0.5
	1816	2.4	0.7		1319	16.5	5.0
					1855	2.8	0.9
11	0026	18.0	5.5	26	0100	18.8	5.7
M	0650	-0.5	-0.2	Tu	0735	-2.4	-0.7
	1309	16.8	5.1		1401	16.9	5.2
	1855	2.0	0.6		1933	3.1	0.9
12	0100	19.2	5.9	27	0137	18.9	5.8
Tu	0728	-2.3	-0.7	W	0812	-2.6	-0.8
	1353	17.8	5.4		1442	17.0	5.2
	1936	1.8	0.5		2012	3.4	1.0
13	0135	20.2	6.2	28	0209	18.7	5.7
W	0807	-3.6	-1.1	Th	0846	-2.5	-0.8
	1436	18.3	5.6		1518	16.8	5.1
	2015	1.8	0.5		2050	3.8	1.2
14	0214	20.7	6.3	29	0244	18.3	5.6
Th	0849	-4.4	-1.3	F	0923	-2.0	-0.6
	1520	18.4	5.6		1556	16.4	5.0
	2057	2.1	0.6		2127	4.3	1.3
15	0256	20.7	6.3	30	0319	17.7	5.4
F	0933	-4.5	-1.4	Sa	0959	-1.3	-0.4
	1607	17.9	5.5		1636	15.8	4.8
	2143	2.6	0.8		2205	4.9	1.5
				31	0357	16.8	5.1
				Su	1036	-0.5	-0.2
					1719	15.1	4.6
					2247	5.5	1.7

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0438	15.8	4.8	16	0521	18.2	5.5
M	1118	0.5	0.2	Tu	1153	-2.4	-0.7
	1801	14.4	4.4		1835	17.3	5.3
	2329	6.1	1.9				
2	0521	14.7	4.5	17	0025	2.9	0.9
Tu	1201	1.6	0.5	W	0622	16.6	5.1
	1851	13.9	4.2		1248	-0.7	-0.2
					1929	17.0	5.2
3	0025	6.6	2.0	18	0129	2.9	0.9
W	0613	13.6	4.1	Th	0729	15.1	4.6
	1249	2.5	0.8		1347	1.0	0.3
	1939	13.7	4.2		2024	16.8	5.1
4	0129	6.6	2.0	19	0243	2.6	0.8
Th	0715	12.6	3.8	F	0845	14.0	4.3
	1344	3.4	1.0		1446	2.6	0.8
	2032	13.9	4.2		2121	16.7	5.1
5	0239	6.0	1.8	20	0354	1.9	0.6
F	0831	12.2	3.7	Sa	1003	13.5	4.1
	1443	4.0	1.2		1549	3.8	1.2
	2121	14.5	4.4		2214	16.8	5.1
6	0347	4.8	1.5	21	0459	1.0	0.3
Sa	0945	12.4	3.8	Su	1117	13.7	4.2
	1543	4.4	1.3		1648	4.6	1.4
	2206	15.4	4.7		2304	16.9	5.2
7	0443	3.1	0.9	22	0552	0.1	0.0
Su	1056	13.2	4.0	M	1221	14.3	4.4
	1639	4.4	1.3		1744	5.0	1.5
	2251	16.5	5.0		2352	17.1	5.2
8	0533	1.1	0.3	23	0637	-0.6	-0.2
M	1154	14.4	4.4	Tu	1310	15.0	4.6
	1730	4.1	1.2		1831	5.0	1.5
	2336	17.7	5.4				
9	0618	-0.9	-0.3	24	0031	17.3	5.3
Tu	1248	15.6	4.8	W	0719	-1.2	-0.4
	1821	3.7	1.1		1353	15.6	4.8
					1916	4.9	1.5
10	0021	18.9	5.8	25	0114	17.6	5.4
W	0703	-2.7	-0.8	Th	0757	-1.5	-0.5
	1338	16.8	5.1		1433	16.0	4.9
	1908	3.2	1.0		1956	4.7	1.4
11	0106	19.9	6.1	26	0152	17.7	5.4
Th	0750	-4.1	-1.2	F	0833	-1.7	-0.5
	1424	17.6	5.4		1508	16.3	5.0
	1956	2.8	0.9		2035	4.5	1.4
12	0153	20.6	6.3	27	0230	17.8	5.4
F	0836	-4.9	-1.5	Sa	0909	-1.7	-0.5
	1512	18.1	5.5		1544	16.4	5.0
	2045	2.4	0.7		2114	4.4	1.3
13	0240	20.8	6.3	28	0306	17.7	5.4
Sa	0923	-5.2	-1.6	Su	0944	-1.5	-0.5
	1601	18.2	5.5		1620	16.3	5.0
	2135	2.3	0.7		2151	4.4	1.3
14	0333	20.5	6.2	29	0345	17.3	5.3
Su	1013	-4.8	-1.5	M	1018	-1.0	-0.3
	1652	18.0	5.5		1655	16.1	4.9
	2226	2.4	0.7		2230	4.6	1.4
15	0425	19.6	6.0	30	0423	16.6	5.1
M	1102	-3.8	-1.2	Tu	1055	-0.3	-0.1
	1742	17.7	5.4		1732	15.9	4.8
	2324	2.6	0.8		2311	4.8	1.5

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0505	15.7	4.8	16	0604	17.3	5.3
W	1131	0.7	0.2	Th	1214	-0.2	-0.1
	1804	15.6	4.8		1844	18.3	5.6
	2356	5.0	1.5				
2	0550	14.6	4.5	17	0059	1.6	0.5
Th	1206	1.8	0.5	F	0705	15.4	4.7
	1844	15.4	4.7		1302	2.0	0.6
					1931	17.4	5.3
3	0043	5.0	1.5	18	0202	2.2	0.7
F	0638	13.6	4.1	Sa	0810	13.7	4.2
	1248	3.0	0.9		1357	4.2	1.3
	1923	15.4	4.7		2023	16.5	5.0
4	0141	4.7	1.4	19	0315	2.4	0.7
Sa	0742	12.7	3.9	Su	0933	12.8	3.9
	1338	4.2	1.3		1459	5.9	1.8
	2008	15.5	4.7		2123	15.8	4.8
5	0246	4.1	1.2	20	0427	2.2	0.7
Su	0857	12.3	3.7	M	1101	12.8	3.9
	1439	5.2	1.6		1615	6.8	2.1
	2101	15.8	4.8		2224	15.5	4.7
6	0352	2.9	0.9	21	0533	1.7	0.5
M	1016	12.6	3.8	Tu	1215	13.4	4.1
	1546	5.8	1.8		1722	6.9	2.1
	2155	16.4	5.0		2323	15.6	4.8
7	0457	1.3	0.4	22	0626	0.9	0.3
Tu	1131	13.5	4.1	W	1308	14.3	4.4
	1654	5.7	1.7		1818	6.5	2.0
	2256	17.3	5.3				
8	0555	-0.6	-0.2	23	0015	16.1	4.9
W	1234	14.9	4.5	Th	0711	0.2	0.1
	1756	5.1	1.6		1350	15.2	4.6
	2355	18.5	5.6		1906	5.8	1.8
9	0647	-2.4	-0.7	24	0101	16.8	5.1
Th	1327	16.3	5.0	F	0746	-0.5	-0.2
	1852	4.1	1.2		1420	16.0	4.9
					1945	5.0	1.5
10	0050	19.7	6.0	25	0143	17.5	5.3
F	0737	-3.9	-1.2	Sa	0820	-1.1	-0.3
	1415	17.6	5.4		1452	16.7	5.1
	1945	2.9	0.9		2022	4.2	1.3
11	0143	20.7	6.3	26	0219	18.1	5.5
Sa	0826	-5.0	-1.5	Su	0851	-1.4	-0.4
	1503	18.6	5.7		1522	17.2	5.2
	2035	1.9	0.6		2057	3.7	1.1
12	0236	21.3	6.5	27	0255	18.4	5.6
Su	0913	-5.4	-1.6	M	0923	-1.5	-0.5
	1546	19.2	5.9		1551	17.5	5.3
	2125	1.1	0.3		2134	3.3	1.0
13	0327	21.2	6.5	28	0332	18.3	5.6
M	0957	-5.1	-1.6	Tu	0954	-1.2	-0.4
	1631	19.5	5.9		1621	17.7	5.4
	2215	0.8	0.2		2208	3.1	0.9
14	0417	20.4	6.2	29	0407	17.8	5.4
Tu	1042	-4.0	-1.2	W	1026	-0.5	-0.2
	1716	19.4	5.9		1650	17.6	5.4
	2306	0.8	0.2		2243	3.1	0.9
15	0510	19.0	5.8	30	0444	16.9	5.2
W	1127	-2.3	-0.7	Th	1055	0.5	0.2
	1759	19.0	5.8		1719	17.4	5.3
	2359	1.1	0.3		2321	3.1	0.9
				31	0521	15.8	4.8
				F	1127	1.9	0.6
					1751	17.1	5.2

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0003	3.3	1.0	16	0115	2.3	0.7
Sa	0609	14.6	4.5	Su	0734	13.7	4.2
	1206	3.3	1.0		1309	5.9	1.8
	1825	16.7	5.1		1925	15.9	4.8
2	0049	3.4	1.0	17	0225	3.4	1.0
Su	0705	13.3	4.1	M	0859	12.4	3.8
	1249	4.9	1.5		1417	7.7	2.3
	1906	16.3	5.0		2026	14.7	4.5
3	0152	3.4	1.0	18	0354	3.8	1.2
M	0821	12.4	3.8	Tu	1048	12.4	3.8
	1350	6.3	1.9		1547	8.5	2.6
	2006	16.0	4.9		2148	14.1	4.3
4	0310	3.0	0.9	19	0517	3.3	1.0
Tu	0953	12.3	3.7	W	1207	13.3	4.1
	1509	7.1	2.2		1717	8.1	2.5
	2116	16.1	4.9		2312	14.5	4.4
5	0432	1.8	0.5	20	0615	2.3	0.7
W	1122	13.3	4.1	Th	1255	14.4	4.4
	1635	6.9	2.1		1813	7.0	2.1
	2232	16.8	5.1				
6	0541	0.0	0.0	21	0010	15.5	4.7
Th	1227	14.9	4.5	F	0655	1.3	0.4
	1744	5.7	1.7		1328	15.5	4.7
	2344	18.2	5.5		1855	5.8	1.8
7	0639	-1.9	-0.6	22	0052	16.7	5.1
F	1321	16.7	5.1	Sa	0727	0.3	0.1
	1845	3.9	1.2		1358	16.5	5.0
					1931	4.5	1.4
8	0045	19.7	6.0	23	0131	17.8	5.4
Sa	0727	-3.5	-1.1	Su	0757	-0.4	-0.1
	1403	18.4	5.6		1423	17.5	5.3
	1936	2.1	0.6		2005	3.3	1.0
9	0138	21.1	6.4	24	0204	18.7	5.7
Su	0813	-4.6	-1.4	M	0826	-0.9	-0.3
	1442	19.7	6.0		1450	18.4	5.6
	2025	0.6	0.2		2035	2.4	0.7
10	0230	21.9	6.7	25	0238	19.1	5.8
M	0854	-4.9	-1.5	Tu	0854	-1.0	-0.3
	1522	20.7	6.3		1515	19.0	5.8
	2111	-0.6	-0.2		2107	1.7	0.5
11	0316	21.9	6.7	26	0312	19.2	5.9
Tu	0935	-4.4	-1.3	W	0923	-0.7	-0.2
	1602	21.1	6.4		1541	19.3	5.9
	2157	-1.1	-0.3		2141	1.2	0.4
12	0404	21.1	6.4	27	0346	18.8	5.7
W	1015	-3.1	-0.9	Th	0951	0.1	0.0
	1639	20.9	6.4		1605	19.3	5.9
	2242	-0.9	-0.3		2214	1.1	0.3
13	0450	19.6	6.0	28	0423	18.0	5.5
Th	1055	-1.2	-0.4	F	1023	1.2	0.4
	1716	20.2	6.2		1634	19.0	5.8
	2329	-0.2	-0.1		2247	1.2	0.4
14	0539	17.7	5.4	29	0500	16.8	5.1
F	1137	1.1	0.3	Sa	1055	2.6	0.8
	1756	19.0	5.8		1703	18.5	5.6
					2327	1.6	0.5
15	0020	1.0	0.3	30	0543	15.4	4.7
Sa	0633	15.6	4.8	Su	1131	4.2	1.3
	1219	3.6	1.1		1737	17.7	5.4
	1838	17.5	5.3				
				31	0013	2.3	0.7
				M	0641	13.8	4.2
					1215	5.9	1.8
					1822	16.8	5.1

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0115	3.0	0.9	16	0315	5.0	1.5
Tu	0758	12.6	3.8	W	1032	12.4	3.8
	1321	7.4	2.3		1529	9.3	2.8
	1926	15.9	4.8		2116	13.1	4.0
2	0243	3.2	1.0	17	0453	4.4	1.3
W	0947	12.5	3.8	Th	1147	13.4	4.1
	1455	8.0	2.4		1709	8.3	2.5
	2056	15.5	4.7		2253	13.8	4.2
3	0419	2.2	0.7	18	0549	3.4	1.0
Th	1117	13.8	4.2	F	1229	14.7	4.5
	1632	7.2	2.2		1802	6.8	2.1
	2229	16.4	5.0		2352	15.1	4.6
4	0530	0.5	0.2	19	0626	2.3	0.7
F	1216	15.7	4.8	Sa	1255	15.9	4.8
	1741	5.2	1.6		1837	5.2	1.6
	2341	18.0	5.5				
5	0626	-1.3	-0.4	20	0034	16.5	5.0
Sa	1300	17.7	5.4	Su	0658	1.3	0.4
	1839	2.9	0.9		1322	17.2	5.2
					1909	3.6	1.1
6	0040	19.8	6.0	21	0109	17.8	5.4
Su	0711	-2.7	-0.8	M	0724	0.6	0.2
	1339	19.6	6.0		1345	18.4	5.6
	1925	0.7	0.2		1937	2.1	0.6
7	0132	21.2	6.5	22	0144	18.8	5.7
M	0751	-3.5	-1.1	Tu	0753	0.1	0.0
	1416	21.0	6.4		1407	19.4	5.9
	2010	-1.1	-0.3		2009	0.9	0.3
8	0218	21.9	6.7	23	0217	19.4	5.9
Tu	0830	-3.5	-1.1	W	0821	0.1	0.0
	1451	21.9	6.7		1431	20.1	6.1
	2052	-2.2	-0.7		2039	-0.1	0.0
9	0303	21.9	6.7	24	0251	19.6	6.0
W	0909	-2.7	-0.8	Th	0850	0.4	0.1
	1525	22.2	6.8		1458	20.5	6.2
	2133	-2.6	-0.8		2110	-0.7	-0.2
10	0346	21.1	6.4	25	0327	19.3	5.9
Th	0946	-1.3	-0.4	F	0921	1.2	0.4
	1559	21.7	6.6		1525	20.5	6.2
	2214	-2.1	-0.6		2144	-0.8	-0.2
11	0428	19.7	6.0	26	0403	18.5	5.6
F	1023	0.6	0.2	Sa	0953	2.3	0.7
	1633	20.6	6.3		1554	20.1	6.1
	2255	-0.9	-0.3		2221	-0.5	-0.2
12	0514	17.8	5.4	27	0442	17.3	5.3
Sa	1100	2.9	0.9	Su	1029	3.7	1.1
	1708	19.0	5.8		1626	19.3	5.9
	2340	0.7	0.2		2302	0.2	0.1
13	0601	15.7	4.8	28	0532	15.8	4.8
Su	1140	5.1	1.6	M	1108	5.2	1.6
	1745	17.2	5.2		1706	18.2	5.5
					2351	1.3	0.4
14	0028	2.5	0.8	29	0631	14.2	4.3
M	0700	13.8	4.2	Tu	1159	6.7	2.0
	1225	7.2	2.2		1756	16.8	5.1
	1828	15.3	4.7				
15	0133	4.2	1.3	30	0057	2.4	0.7
Tu	0826	12.4	3.8	W	0757	13.2	4.0
	1334	8.8	2.7		1313	7.9	2.4
	1933	13.8	4.2		1913	15.5	4.7

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

SELDOVIA, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0229	2.9	0.9	16	0400	5.0	1.5
Th	0940	13.5	4.1	F	1055	13.6	4.1
	1458	7.9	2.4		1640	8.1	2.5
	2054	15.1	4.6		2217	13.1	4.0
2	0401	2.2	0.7	17	0459	4.3	1.3
F	1059	14.9	4.5	Sa	1138	14.8	4.5
	1632	6.3	1.9		1733	6.4	2.0
	2227	16.1	4.9		2320	14.3	4.4
3	0512	0.9	0.3	18	0541	3.4	1.0
Sa	1151	16.9	5.2	Su	1207	16.1	4.9
	1736	3.9	1.2		1805	4.6	1.4
	2338	17.7	5.4				
4	0602	-0.4	-0.1	19	0005	15.7	4.8
Su	1231	18.8	5.7	M	0613	2.6	0.8
	1826	1.4	0.4		1231	17.4	5.3
					1837	2.8	0.9
5	0032	19.3	5.9	20	0043	17.0	5.2
M	0647	-1.3	-0.4	Tu	0642	2.1	0.6
	1308	20.4	6.2		1258	18.7	5.7
	1910	-0.8	-0.2		1909	1.1	0.3
6	0121	20.5	6.2	21	0119	18.1	5.5
Tu	0726	-1.6	-0.5	W	0714	1.7	0.5
	1343	21.7	6.6		1324	19.8	6.0
	1951	-2.4	-0.7		1940	-0.4	-0.1
7	0205	21.1	6.4	22	0156	18.9	5.8
W	0804	-1.3	-0.4	Th	0746	1.6	0.5
	1417	22.3	6.8		1351	20.6	6.3
	2030	-3.3	-1.0		2012	-1.6	-0.5
8	0246	21.0	6.4	23	0233	19.3	5.9
Th	0840	-0.4	-0.1	F	0819	1.9	0.6
	1449	22.2	6.8		1420	21.0	6.4
	2109	-3.3	-1.0		2047	-2.3	-0.7
9	0328	20.3	6.2	24	0310	19.1	5.8
F	0916	0.9	0.3	Sa	0853	2.4	0.7
	1521	21.5	6.6		1451	21.0	6.4
	2148	-2.6	-0.8		2123	-2.4	-0.7
10	0407	19.1	5.8	25	0351	18.5	5.6
Sa	0954	2.5	0.8	Su	0931	3.3	1.0
	1554	20.2	6.2		1526	20.6	6.3
	2226	-1.3	-0.4		2202	-2.0	-0.6
11	0450	17.5	5.3	26	0434	17.4	5.3
Su	1029	4.3	1.3	M	1013	4.3	1.3
	1626	18.6	5.7		1605	19.6	6.0
	2306	0.5	0.2		2247	-1.1	-0.3
12	0537	15.7	4.8	27	0529	16.1	4.9
M	1108	6.1	1.9	Tu	1100	5.5	1.7
	1703	16.8	5.1		1652	18.3	5.6
	2351	2.4	0.7		2343	0.1	0.0
13	0633	14.0	4.3	28	0632	14.9	4.5
Tu	1156	7.8	2.4	W	1159	6.7	2.0
	1745	14.9	4.5		1753	16.7	5.1
14	0049	4.1	1.2	29	0049	1.4	0.4
W	0753	12.8	3.9	Th	0752	14.4	4.4
	1304	9.1	2.8		1318	7.2	2.2
	1851	13.3	4.1		1913	15.3	4.7
15	0218	5.1	1.6	30	0211	2.1	0.6
Th	0939	12.7	3.9	F	0914	14.9	4.5
	1459	9.3	2.8		1454	6.6	2.0
	2031	12.6	3.8		2049	14.9	4.5
				31	0335	2.1	0.6
				Sa	1023	16.1	4.9
					1616	4.8	1.5
					2217	15.6	4.8

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0440	1.6	0.5	16	0435	4.7	1.4
Su	1112	17.7	5.4	M	1101	15.8	4.8
	1720	2.4	0.7		1725	4.3	1.3
	2325	16.8	5.1		2325	14.4	4.4
2	0533	1.1	0.3	17	0517	4.3	1.3
M	1157	19.2	5.9	Tu	1133	17.1	5.2
	1809	0.1	0.0		1800	2.4	0.7
3	0021	18.0	5.5	18	0015	15.6	4.8
Tu	0618	0.9	0.3	W	0557	3.9	1.2
	1234	20.4	6.2		1207	18.3	5.6
	1852	-1.7	-0.5		1836	0.5	0.2
4	0111	19.0	5.8	19	0055	16.8	5.1
W	0658	0.9	0.3	Th	0635	3.5	1.1
	1309	21.2	6.5		1239	19.4	5.9
	1933	-2.9	-0.9		1911	-1.1	-0.3
5	0153	19.5	5.9	20	0137	17.8	5.4
Th	0737	1.3	0.4	F	0714	3.3	1.0
	1343	21.5	6.6		1314	20.4	6.2
	2009	-3.4	-1.0		1949	-2.5	-0.8
6	0234	19.5	5.9	21	0217	18.4	5.6
F	0814	2.0	0.6	Sa	0753	3.2	1.0
	1416	21.3	6.5		1350	21.0	6.4
	2047	-3.3	-1.0		2028	-3.3	-1.0
7	0312	19.1	5.8	22	0300	18.6	5.7
Sa	0851	2.9	0.9	Su	0835	3.3	1.0
	1451	20.5	6.2		1429	21.1	6.4
	2124	-2.5	-0.8		2109	-3.6	-1.1
8	0351	18.2	5.5	23	0345	18.3	5.6
Su	0928	3.9	1.2	M	0917	3.6	1.1
	1523	19.4	5.9		1512	20.8	6.3
	2201	-1.3	-0.4		2154	-3.3	-1.0
9	0434	17.0	5.2	24	0434	17.8	5.4
M	1007	5.1	1.6	Tu	1005	4.1	1.2
	1559	18.1	5.5		1600	19.9	6.1
	2241	0.1	0.0		2241	-2.5	-0.8
10	0519	15.7	4.8	25	0524	17.0	5.2
Tu	1047	6.4	2.0	W	1058	4.7	1.4
	1637	16.6	5.1		1652	18.6	5.7
	2324	1.6	0.5		2335	-1.3	-0.4
11	0612	14.5	4.4	26	0625	16.4	5.0
W	1135	7.5	2.3	Th	1159	5.2	1.6
	1719	15.0	4.6		1755	17.1	5.2
12	0012	3.1	0.9	27	0036	0.0	0.0
Th	0711	13.6	4.1	F	0726	16.1	4.9
	1236	8.4	2.6		1313	5.4	1.6
	1820	13.6	4.1		1907	15.6	4.8
13	0118	4.2	1.3	28	0142	1.3	0.4
F	0825	13.4	4.1	Sa	0833	16.3	5.0
	1403	8.5	2.6		1434	4.7	1.4
	1941	12.6	3.8		2033	14.8	4.5
14	0231	4.9	1.5	29	0252	2.2	0.7
Sa	0932	13.8	4.2	Su	0934	17.0	5.2
	1538	7.7	2.3		1553	3.3	1.0
	2111	12.5	3.8		2156	14.8	4.5
15	0340	4.9	1.5	30	0358	2.8	0.9
Su	1024	14.7	4.5	M	1030	17.8	5.4
	1640	6.1	1.9		1655	1.5	0.5
	2227	13.2	4.0		2309	15.4	4.7

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0457	3.2	1.0	16	0415	5.8	1.8
Tu	1117	18.7	5.7	W	1030	16.4	5.0
	1750	-0.2	-0.1		1717	2.5	0.8
					2343	14.0	4.3
2	0010	16.2	4.9	17	0510	5.7	1.7
W	0549	3.4	1.0	Th	1115	17.5	5.3
	1202	19.3	5.9		1807	0.6	0.2
	1834	-1.5	-0.5				
3	0100	17.0	5.2	18	0035	15.3	4.7
Th	0634	3.5	1.1	F	0602	5.3	1.6
	1240	19.8	6.0		1201	18.6	5.7
	1916	-2.3	-0.7		1848	-1.2	-0.4
4	0146	17.6	5.4	19	0122	16.5	5.0
F	0716	3.7	1.1	Sa	0650	4.6	1.4
	1316	19.9	6.1		1247	19.7	6.0
	1954	-2.7	-0.8		1932	-2.7	-0.8
5	0226	17.9	5.5	20	0207	17.5	5.3
Sa	0755	3.9	1.2	Su	0736	3.9	1.2
	1354	19.8	6.0		1333	20.6	6.3
	2034	-2.6	-0.8		2016	-3.9	-1.2
6	0304	17.8	5.4	21	0253	18.3	5.6
Su	0835	4.2	1.3	M	0822	3.3	1.0
	1431	19.4	5.9		1421	21.1	6.4
	2109	-2.2	-0.7		2101	-4.5	-1.4
7	0343	17.5	5.3	22	0338	18.7	5.7
M	0913	4.6	1.4	Tu	0911	2.9	0.9
	1508	18.7	5.7		1509	21.2	6.5
	2145	-1.5	-0.5		2146	-4.5	-1.4
8	0422	16.9	5.2	23	0425	18.8	5.7
Tu	0954	5.1	1.6	W	1000	2.7	0.8
	1544	17.9	5.5		1558	20.6	6.3
	2223	-0.5	-0.2		2234	-3.9	-1.2
9	0503	16.2	4.9	24	0511	18.6	5.7
W	1034	5.7	1.7	Th	1052	2.7	0.8
	1623	16.8	5.1		1651	19.4	5.9
	2302	0.5	0.2		2321	-2.6	-0.8
10	0543	15.6	4.8	25	0601	18.4	5.6
Th	1119	6.3	1.9	F	1148	2.8	0.9
	1706	15.6	4.8		1748	17.9	5.5
	2343	1.7	0.5				
11	0628	15.0	4.6	26	0012	-1.0	-0.3
F	1206	6.8	2.1	Sa	0651	18.0	5.5
	1756	14.4	4.4		1251	3.0	0.9
					1851	16.1	4.9
12	0025	2.9	0.9	27	0107	1.0	0.3
Sa	0717	14.7	4.5	Su	0744	17.7	5.4
	1305	7.0	2.1		1400	2.9	0.9
	1854	13.2	4.0		2005	14.7	4.5
13	0115	4.0	1.2	28	0206	2.8	0.9
Su	0806	14.6	4.5	M	0841	17.4	5.3
	1415	6.7	2.0		1517	2.4	0.7
	2005	12.4	3.8		2126	13.8	4.2
14	0214	5.0	1.5	29	0310	4.4	1.3
M	0854	14.9	4.5	Tu	0938	17.2	5.2
	1526	5.8	1.8		1627	1.6	0.5
	2124	12.3	3.7		2248	13.9	4.2
15	0315	5.6	1.7	30	0419	5.4	1.6
Tu	0942	15.6	4.8	W	1037	17.3	5.3
	1630	4.3	1.3		1730	0.6	0.2
	2238	12.9	3.9				
				31	0002	14.5	4.4
				Th	0522	5.7	1.7
					1130	17.5	5.3
					1823	-0.3	-0.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0529	22.4	6.8	16	0547	20.4	6.2
Th	1126	3.5	1.1	F	1139	5.0	1.5
	1701	24.1	7.3		1714	20.5	6.2
	2359	-4.8	-1.5				
2	0616	22.6	6.9	17	0002	-1.8	-0.5
F	1216	2.9	0.9	Sa	0619	20.5	6.2
	1754	23.5	7.2		1216	4.3	1.3
					1750	20.3	6.2
3	0046	-3.9	-1.2	18	0034	-1.5	-0.5
Sa	0703	22.5	6.9	Su	0648	20.5	6.2
	1307	2.7	0.8		1251	3.8	1.2
	1848	22.3	6.8		1827	19.8	6.0
4	0133	-2.4	-0.7	19	0107	-0.7	-0.2
Su	0749	22.1	6.7	M	0720	20.3	6.2
	1359	2.8	0.9		1330	3.5	1.1
	1948	20.6	6.3		1907	18.9	5.8
5	0218	-0.4	-0.1	20	0141	0.5	0.2
M	0839	21.4	6.5	Tu	0752	20.1	6.1
	1455	3.1	0.9		1415	3.5	1.1
	2049	18.8	5.7		1952	17.8	5.4
6	0306	2.0	0.6	21	0215	2.1	0.6
Tu	0930	20.6	6.3	W	0826	19.7	6.0
	1556	3.5	1.1		1503	3.6	1.1
	2158	17.1	5.2		2052	16.4	5.0
7	0403	4.4	1.3	22	0255	4.1	1.2
W	1026	19.8	6.0	Th	0906	19.3	5.9
	1706	3.7	1.1		1603	3.8	1.2
	2312	16.1	4.9		2209	15.4	4.7
8	0507	6.5	2.0	23	0348	6.2	1.9
Th	1125	19.1	5.8	F	0959	19.0	5.8
	1815	3.3	1.0		1719	3.5	1.1
					2338	15.1	4.6
9	0027	15.9	4.8	24	0507	8.0	2.4
F	0617	8.0	2.4	Sa	1106	18.9	5.8
	1222	18.8	5.7		1834	2.5	0.8
	1921	2.6	0.8				
10	0139	16.5	5.0	25	0057	15.9	4.8
Sa	0723	8.6	2.6	Su	0633	8.7	2.7
	1318	18.7	5.7		1219	19.3	5.9
	2019	1.6	0.5		1943	0.8	0.2
11	0239	17.4	5.3	26	0203	17.4	5.3
Su	0822	8.5	2.6	M	0747	8.1	2.5
	1406	18.9	5.8		1326	20.3	6.2
	2104	0.6	0.2		2040	-1.1	-0.3
12	0326	18.4	5.6	27	0301	19.1	5.8
M	0909	8.1	2.5	Tu	0848	6.7	2.0
	1449	19.2	5.9		1424	21.7	6.6
	2144	-0.2	-0.1		2131	-2.9	-0.9
13	0405	19.2	5.9	28	0349	20.7	6.3
Tu	0950	7.4	2.3	W	0939	5.0	1.5
	1531	19.7	6.0		1520	23.0	7.0
	2221	-0.9	-0.3		2216	-4.2	-1.3
14	0440	19.8	6.0	29	0432	22.0	6.7
W	1027	6.6	2.0	Th	1028	3.2	1.0
	1606	20.1	6.1		1609	23.9	7.3
	2255	-1.5	-0.5		2300	-4.8	-1.5
15	0515	20.2	6.2	30	0514	22.9	7.0
Th	1104	5.8	1.8	F	1114	1.7	0.5
	1641	20.4	6.2		1658	24.2	7.4
	2329	-1.8	-0.5		2342	-4.7	-1.4
				31	0552	23.5	7.2
				Sa	1159	0.7	0.2
					1745	23.8	7.3

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0022	-3.9	-1.2	16	0006	-1.8	-0.5
Su	0632	23.5	7.2	M	0608	21.6	6.6
	1243	0.2	0.1		1227	1.0	0.3
	1835	22.7	6.9		1811	20.7	6.3
2	0103	-2.3	-0.7	17	0035	-0.9	-0.3
M	0712	23.1	7.0	Tu	0635	21.7	6.6
	1330	0.4	0.1		1303	0.7	0.2
	1925	21.1	6.4		1848	19.9	6.1
3	0144	-0.1	0.0	18	0107	0.5	0.2
Tu	0752	22.2	6.8	W	0703	21.5	6.6
	1421	1.1	0.3		1344	0.8	0.2
	2018	19.1	5.8		1933	18.7	5.7
4	0225	2.5	0.8	19	0141	2.3	0.7
W	0837	20.9	6.4	Th	0735	21.0	6.4
	1514	2.2	0.7		1428	1.4	0.4
	2119	17.1	5.2		2028	17.1	5.2
5	0313	5.3	1.6	20	0220	4.6	1.4
Th	0927	19.3	5.9	F	0812	20.2	6.2
	1615	3.4	1.0		1527	2.3	0.7
	2232	15.6	4.8		2144	15.6	4.8
6	0411	7.9	2.4	21	0313	7.0	2.1
F	1024	17.9	5.5	Sa	0904	19.0	5.8
	1732	4.0	1.2		1646	2.9	0.9
	2355	15.0	4.6		2315	15.0	4.6
7	0531	9.7	3.0	22	0438	8.9	2.7
Sa	1135	16.9	5.2	Su	1027	18.1	5.5
	1849	3.8	1.2		1813	2.6	0.8
8	0119	15.5	4.7	23	0045	15.7	4.8
Su	0657	10.1	3.1	M	0621	9.3	2.8
	1249	16.7	5.1		1204	18.1	5.5
	1958	2.8	0.9		1927	1.1	0.3
9	0227	16.6	5.1	24	0155	17.3	5.3
M	0809	9.4	2.9	Tu	0739	7.9	2.4
	1351	17.2	5.2		1323	19.3	5.9
	2048	1.5	0.5		2027	-0.7	-0.2
10	0315	17.8	5.4	25	0249	19.1	5.8
Tu	0859	8.2	2.5	W	0840	5.8	1.8
	1443	18.1	5.5		1424	20.9	6.4
	2128	0.3	0.1		2117	-2.4	-0.7
11	0351	18.8	5.7	26	0333	20.8	6.3
W	0938	6.8	2.1	Th	0928	3.4	1.0
	1523	19.0	5.8		1517	22.4	6.8
	2202	-0.7	-0.2		2200	-3.5	-1.1
12	0423	19.7	6.0	27	0411	22.2	6.8
Th	1011	5.4	1.6	F	1015	1.3	0.4
	1557	19.8	6.0		1605	23.4	7.1
	2234	-1.5	-0.5		2239	-3.9	-1.2
13	0450	20.3	6.2	28	0448	23.3	7.1
F	1046	4.0	1.2	Sa	1057	-0.4	-0.1
	1629	20.5	6.2		1648	23.8	7.3
	2305	-2.0	-0.6		2318	-3.6	-1.1
14	0517	20.9	6.4				
Sa	1118	2.8	0.9				
	1702	20.9	6.4				
	2335	-2.1	-0.6				
15	0544	21.3	6.5				
Su	1152	1.7	0.5				
	1734	21.0	6.4				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0521	23.8	7.3	16	0502	22.0	6.7
Su	1139	-1.5	-0.5	M	1125	-0.7	-0.2
	1731	23.5	7.2		1716	21.3	6.5
	2355	-2.6	-0.8		2336	-0.9	-0.3
2	0556	23.9	7.3	17	0526	22.5	6.9
M	1219	-1.8	-0.5	Tu	1200	-1.5	-0.5
	1814	22.5	6.9		1752	21.1	6.4
3	0032	-1.0	-0.3	18	0008	0.1	0.0
Tu	0630	23.3	7.1	W	0552	22.7	6.9
	1301	-1.3	-0.4		1239	-1.6	-0.5
	1858	21.1	6.4		1832	20.4	6.2
4	0109	1.1	0.3	19	0040	1.5	0.5
W	0707	22.2	6.8	Th	0622	22.4	6.8
	1346	-0.2	-0.1		1320	-1.2	-0.4
	1949	19.2	5.9		1920	19.1	5.8
5	0148	3.6	1.1	20	0119	3.4	1.0
Th	0740	20.6	6.3	F	0656	21.6	6.6
	1433	1.3	0.4		1405	-0.2	-0.1
	2045	17.2	5.2		2018	17.5	5.3
6	0229	6.2	1.9	21	0202	5.5	1.7
F	0826	18.7	5.7	Sa	0736	20.3	6.2
	1530	3.0	0.9		1508	1.2	0.4
	2156	15.6	4.8		2134	16.1	4.9
7	0322	8.6	2.6	22	0303	7.7	2.3
Sa	0921	16.8	5.1	Su	0839	18.6	5.7
	1643	4.3	1.3		1627	2.3	0.7
	2321	14.7	4.5		2307	15.6	4.8
8	0448	10.4	3.2	23	0438	9.0	2.7
Su	1050	15.4	4.7	M	1021	17.2	5.2
	1809	4.6	1.4		1753	2.3	0.7
9	0051	15.1	4.6	24	0033	16.4	5.0
M	0631	10.5	3.2	Tu	0615	8.5	2.6
	1223	15.2	4.6		1204	17.4	5.3
	1926	3.6	1.1		1908	1.3	0.4
10	0201	16.2	4.9	25	0139	17.9	5.5
Tu	0750	9.2	2.8	W	0731	6.5	2.0
	1334	16.0	4.9		1320	18.7	5.7
	2019	2.3	0.7		2006	-0.1	0.0
11	0246	17.5	5.3	26	0227	19.6	6.0
W	0838	7.5	2.3	Th	0827	4.0	1.2
	1424	17.3	5.3		1419	20.3	6.2
	2101	1.0	0.3		2055	-1.2	-0.4
12	0320	18.6	5.7	27	0307	21.2	6.5
Th	0913	5.6	1.7	F	0915	1.5	0.5
	1503	18.5	5.6		1509	21.6	6.6
	2133	0.0	0.0		2137	-1.8	-0.5
13	0349	19.6	6.0	28	0341	22.4	6.8
F	0947	3.8	1.2	Sa	0957	-0.5	-0.2
	1538	19.6	6.0		1552	22.5	6.9
	2205	-0.8	-0.2		2214	-1.8	-0.5
14	0413	20.4	6.2	29	0414	23.3	7.1
Sa	1020	2.0	0.6	Su	1036	-2.0	-0.6
	1610	20.5	6.2		1633	22.8	6.9
	2234	-1.2	-0.4		2251	-1.3	-0.4
15	0437	21.3	6.5	30	0447	23.7	7.2
Su	1052	0.5	0.2	M	1116	-2.7	-0.8
	1642	21.1	6.4		1713	22.6	6.9
	2305	-1.3	-0.4		2326	-0.2	-0.1
				31	0519	23.5	7.2
				Tu	1155	-2.8	-0.9
					1755	21.8	6.6

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m
1	0002	1.2	0.4
W	0550	22.9	7.0
	1235	-2.1	-0.6
	1837	20.7	6.3
2	0037	3.0	0.9
Th	0622	21.7	6.6
	1315	-0.9	-0.3
	1924	19.2	5.9
3	0115	5.0	1.5
F	0656	20.1	6.1
	1359	0.7	0.2
	2018	17.5	5.3
4	0200	7.0	2.1
Sa	0733	18.2	5.5
	1452	2.5	0.8
	2127	16.0	4.9
5	0254	8.9	2.7
Su	0821	16.2	4.9
	1559	4.0	1.2
	2247	15.2	4.6
6	0415	10.1	3.1
M	1004	14.7	4.5
	1722	4.6	1.4
7	0007	15.3	4.7
Tu	0551	10.0	3.0
	1147	14.5	4.4
	1838	4.2	1.3
8	0111	16.2	4.9
W	0710	8.5	2.6
	1300	15.3	4.7
	1934	3.2	1.0
9	0158	17.3	5.3
Th	0803	6.5	2.0
	1353	16.5	5.0
	2016	2.2	0.7
10	0235	18.4	5.6
F	0840	4.4	1.3
	1435	17.8	5.4
	2053	1.4	0.4
11	030[illegible]	19.5	5.9
Sa	0917	2.3	0.7
	1509	19.0	5.8
	2126	0.8	0.2
12	0328	20.5	6.2
Su	0950	0.4	0.1
	1546	20.1	6.1
	2200	0.5	0.2
13	0354	21.6	6.6
M	1024	-1.2	-0.4
	1620	20.8	6.3
	2232	0.6	0.2
14	0418	22.5	6.9
Tu	1059	-2.4	-0.7
	1658	21.2	6.5
	2307	1.0	0.3
15	0446	23.1	7.0
W	1138	-3.1	-0.9
	1738	21.1	6.4
	2343	1.9	0.6

Day	Time h m	Height ft	Height m
16	0518	23.2	7.1
Th	1219	-3.1	-0.9
	1822	20.5	6.2
17	0022	3.1	0.9
F	0554	22.7	6.9
	1303	-2.5	-0.8
	1914	19.5	5.9
18	0107	4.6	1.4
Sa	0635	21.6	6.6
	1354	-1.3	-0.4
	2018	18.2	5.5
19	0202	6.2	1.9
Su	0728	20.0	6.1
	1458	0.2	0.1
	2132	17.2	5.2
20	0314	7.5	2.3
M	0845	18.1	5.5
	1609	1.5	0.5
	2252	17.0	5.2
21	0437	7.9	2.4
Tu	1027	17.1	5.2
	1729	1.9	0.6
22	0005	17.7	5.4
W	0602	6.8	2.1
	1159	17.3	5.3
	1838	1.6	0.5
23	0105	18.9	5.8
Th	0711	4.7	1.4
	1310	18.3	5.6
	1937	1.1	0.3
24	0153	20.2	6.2
F	0808	2.3	0.7
	1406	19.5	5.9
	2027	0.8	0.2
25	0232	21.4	6.5
Sa	0853	0.2	0.1
	1453	20.5	6.2
	2109	0.8	0.2
26	0307	22.2	6.8
Su	0936	-1.4	-0.4
	1536	21.1	6.4
	2147	1.1	0.3
27	0341	22.8	6.9
M	1016	-2.4	-0.7
	1618	21.4	6.5
	2225	1.8	0.5
28	0411	22.9	7.0
Tu	1054	-2.8	-0.9
	1657	21.3	6.5
	2301	2.7	0.8
29	0443	22.6	6.9
W	1131	-2.7	-0.8
	1736	20.9	6.4
	2339	3.8	1.2
30	0515	21.9	6.7
Th	1210	-2.0	-0.6
	1821	20.2	6.2

MAY

Day	Time h m	Height ft	Height m
1	0015	4.9	1.5
F	0547	20.9	6.4
	1251	-1.0	-0.3
	1907	19.1	5.8
2	0056	6.2	1.9
Sa	0622	19.5	5.9
	1333	0.3	0.1
	1959	17.9	5.5
3	0141	7.4	2.3
Su	0701	17.9	5.5
	1421	1.7	0.5
	2102	16.8	5.1
4	0237	8.4	2.6
M	0757	16.2	4.9
	1519	3.0	0.9
	2208	16.2	4.9
5	0343	9.0	2.7
Tu	0927	14.9	4.5
	1626	3.9	1.2
	2314	16.1	4.9
6	0504	8.8	2.7
W	1058	14.4	4.4
	1735	4.3	1.3
7	0012	16.5	5.0
Th	0617	7.5	2.3
	1212	14.9	4.5
	1833	4.1	1.2
8	0100	17.4	5.3
F	0713	5.7	1.7
	1310	15.8	4.8
	1923	3.8	1.2
9	0137	18.4	5.6
Sa	0759	3.6	1.1
	1358	17.0	5.2
	2007	3.4	1.0
10	0208	19.5	5.9
Su	0840	1.5	0.5
	1440	18.3	5.6
	2046	3.1	0.9
11	0238	20.7	6.3
M	0918	-0.5	-0.2
	1520	19.4	5.9
	2125	3.0	0.9
12	0307	21.8	6.6
Tu	0957	-2.1	-0.6
	1600	20.3	6.2
	2202	3.0	0.9
13	0340	22.8	6.9
W	1038	-3.3	-1.0
	1642	20.9	6.4
	2243	3.2	1.0
14	0415	23.4	7.1
Th	1120	-4.0	-1.2
	1728	21.0	6.4
	2326	3.6	1.1
15	0454	23.4	7.1
F	1206	-4.0	-1.2
	1816	20.7	6.3

Day	Time h m	Height ft	Height m
16	0013	4.2	1.3
Sa	0539	22.8	6.9
	1253	-3.4	-1.0
	1912	20.1	6.1
17	0104	5.0	1.5
Su	0630	21.6	6.6
	1346	-2.2	-0.7
	2013	19.4	5.9
18	0202	5.7	1.7
M	0736	20.0	6.1
	1445	-0.8	-0.2
	2117	18.9	5.8
19	0311	6.1	1.9
Tu	0852	18.5	5.6
	1548	0.6	0.2
	2225	18.8	5.7
20	0424	5.9	1.8
W	1017	17.5	5.3
	1655	1.8	0.5
	2327	19.1	5.8
21	0537	4.9	1.5
Th	1138	17.3	5.3
	1802	2.6	0.8
22	0023	19.7	6.0
F	0646	3.3	1.0
	1249	17.7	5.4
	1902	3.0	0.9
23	0113	20.5	6.2
Sa	0745	1.5	0.5
	1347	18.4	5.6
	1955	3.4	1.0
24	0155	21.1	6.4
Su	0833	-0.1	0.0
	1438	19.1	5.8
	2040	3.9	1.2
25	0232	21.5	6.6
M	0916	-1.2	-0.4
	1525	19.7	6.0
	2123	4.3	1.3
26	0309	21.7	6.6
Tu	0957	-1.9	-0.6
	1604	20.0	6.1
	2202	4.8	1.5
27	0341	21.7	6.6
W	1037	-2.1	-0.6
	1644	20.2	6.2
	2242	5.3	1.6
28	0417	21.4	6.5
Th	1115	-2.0	-0.6
	1726	20.1	6.1
	2319	5.7	1.7
29	0449	20.9	6.4
F	1153	-1.7	-0.5
	1808	19.8	6.0
30	0000	6.1	1.9
Sa	0527	20.2	6.2
	1232	-1.1	-0.3
	1852	19.3	5.9
31	0042	6.5	2.0
Su	0606	19.3	5.9
	1312	-0.3	-0.1
	1941	18.6	5.7

JUNE

Day	Time h m	Height ft	Height m
1	0125	6.9	2.1
M	0648	18.1	5.5
	1357	0.7	0.2
	2031	18.0	5.5
2	0215	7.2	2.2
Tu	0744	16.9	5.2
	1443	1.8	0.5
	2122	17.4	5.3
3	0311	7.4	2.3
W	0850	15.7	4.8
	1532	2.9	0.9
	2217	17.2	5.2
4	0412	7.1	2.2
Th	1005	14.9	4.5
	1627	4.0	1.2
	2306	17.2	5.2
5	0518	6.3	1.9
F	1118	14.8	4.5
	1723	4.8	1.5
	2353	17.7	5.4
6	0621	4.9	1.5
Sa	1223	15.3	4.7
	1822	5.3	1.6
7	0033	18.5	5.6
Su	0716	3.2	1.0
	1318	16.2	4.9
	1915	5.5	1.7
8	0113	19.5	5.9
M	0805	1.2	0.4
	1410	17.4	5.3
	2004	5.5	1.7
9	0150	20.6	6.3
Tu	0850	-0.7	-0.2
	1459	18.6	5.7
	2053	5.3	1.6
10	0230	21.8	6.6
W	0936	-2.3	-0.7
	1546	19.7	6.0
	2138	5.0	1.5
11	0309	22.8	6.9
Th	1021	-3.6	-1.1
	1632	20.6	6.3
	2227	4.6	1.4
12	0355	23.4	7.1
F	1106	-4.4	-1.3
	1719	21.1	6.4
	2314	4.3	1.3
13	0444	23.5	7.2
Sa	1152	-4.5	-1.4
	1811	21.3	6.5
14	0005	4.1	1.2
Su	0536	23.0	7.0
	1242	-4.1	-1.2
	1901	21.2	6.5
15	0058	4.0	1.2
M	0632	22.1	6.7
	1332	-3.1	-0.9
	1956	21.0	6.4

Day	Time h m	Height ft	Height m
16	0153	3.9	1.2
Tu	0735	20.7	6.3
	1423	-1.6	-0.5
	2050	20.6	6.3
17	0252	4.0	1.2
W	0844	19.2	5.9
	1519	0.3	0.1
	2147	20.3	6.2
18	0359	3.9	1.2
Th	0956	17.9	5.5
	1617	2.2	0.7
	2244	20.1	6.1
19	0507	3.5	1.1
F	1111	17.1	5.2
	1717	4.0	1.2
	2338	20.0	6.1
20	0614	2.6	0.8
Sa	1223	16.9	5.2
	1823	5.3	1.6
21	0031	20.0	6.1
Su	0718	1.6	0.5
	1327	17.2	5.2
	1921	6.2	1.9
22	0118	20.1	6.1
M	0812	0.6	0.2
	1424	17.8	5.4
	2016	6.7	2.0
23	0204	20.2	6.2
Tu	0859	-0.3	-0.1
	1515	18.5	5.6
	2104	6.8	2.1
24	0246	20.3	6.2
W	0942	-0.9	-0.3
	1555	19.1	5.8
	2146	6.8	2.1
25	0323	20.3	6.2
Th	1021	-1.3	-0.4
	1637	19.5	5.9
	2227	6.6	2.0
26	0402	20.3	6.2
F	1059	-1.5	-0.5
	1716	19.8	6.0
	2307	6.3	1.9
27	0438	20.2	6.2
Sa	1136	-1.6	-0.5
	1755	19.9	6.1
	2346	6.0	1.8
28	0516	20.0	6.1
Su	1213	-1.4	-0.4
	1835	19.8	6.0
29	0024	5.7	1.7
M	0557	19.5	5.9
	1250	-1.0	-0.3
	1912	19.5	5.9
30	0106	5.5	1.7
Tu	0637	18.8	5.7
	1327	-0.3	-0.1
	1952	19.1	5.8

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0148	5.3	1.6	16	0227	1.8	0.5
W	0722	17.9	5.5	Th	0821	19.8	6.0
	1405	0.8	0.2		1442	0.7	0.2
	2029	18.7	5.7		2100	21.2	6.5
2	0233	5.3	1.6	17	0327	2.2	0.7
Th	0810	16.8	5.1	F	0927	18.0	5.5
	1442	2.1	0.6		1535	3.2	1.0
	2110	18.3	5.6		2153	20.3	6.2
3	0324	5.2	1.6	18	0429	2.7	0.8
F	0914	15.7	4.8	Sa	1038	16.6	5.1
	1524	3.7	1.1		1634	5.6	1.7
	2153	18.1	5.5		2251	19.4	5.9
4	0424	4.9	1.5	19	0541	2.8	0.9
Sa	1024	15.0	4.6	Su	1153	16.0	4.9
	1615	5.3	1.6		1743	7.5	2.3
	2238	18.2	5.5		2349	18.8	5.7
5	0530	4.2	1.3	20	0652	2.4	0.7
Su	1138	14.9	4.5	M	1309	16.2	4.9
	1716	6.6	2.0		1852	8.4	2.6
	2329	18.5	5.6				
6	0634	3.0	0.9	21	0049	18.5	5.6
M	1246	15.5	4.7	Tu	0753	1.7	0.5
	1825	7.4	2.3		1415	17.0	5.2
					1958	8.5	2.6
7	0020	19.2	5.9	22	0147	18.6	5.7
Tu	0734	1.4	0.4	W	0845	0.8	0.2
	1348	16.7	5.1		1508	17.9	5.5
	1931	7.4	2.3		2053	8.0	2.4
8	0113	20.2	6.2	23	0235	18.9	5.8
W	0830	-0.4	-0.1	Th	0928	-0.1	0.0
	1446	18.1	5.5		1549	18.8	5.7
	2030	6.9	2.1		2138	7.2	2.2
9	0206	21.3	6.5	24	0317	19.4	5.9
Th	0920	-2.2	-0.7	F	1008	-0.8	-0.2
	1533	19.5	5.9		1626	19.4	5.9
	2125	5.9	1.8		2215	6.4	2.0
10	0257	22.5	6.9	25	0356	19.8	6.0
F	1007	-3.6	-1.1	Sa	1042	-1.3	-0.4
	1622	20.7	6.3		1700	19.9	6.1
	2216	4.7	1.4		2252	5.5	1.7
11	0349	23.3	7.1	26	0431	20.2	6.2
Sa	1053	-4.6	-1.4	Su	1116	-1.7	-0.5
	1707	21.6	6.6		1731	20.2	6.2
	2304	3.5	1.1		2327	4.6	1.4
12	0439	23.8	7.3	27	0507	20.3	6.2
Su	1139	-5.0	-1.5	M	1149	-1.7	-0.5
	1753	22.2	6.8		1803	20.4	6.2
	2353	2.5	0.8				
13	0532	23.6	7.2	28	0003	3.9	1.2
M	1224	-4.6	-1.4	Tu	0542	20.2	6.2
	1838	22.4	6.8		1221	-1.4	-0.4
					1835	20.3	6.2
14	0043	1.9	0.6	29	0038	3.3	1.0
Tu	0626	22.8	6.9	W	0617	19.7	6.0
	1309	-3.4	-1.0		1253	-0.7	-0.2
	1925	22.3	6.8		1904	20.2	6.2
15	0133	1.6	0.5	30	0117	3.0	0.9
W	0722	21.5	6.6	Th	0656	18.9	5.8
	1354	-1.6	-0.5		1325	0.4	0.1
	2013	21.9	6.7		1933	19.9	6.1
				31	0154	3.0	0.9
				F	0738	17.8	5.4
					1357	2.0	0.6
					2002	19.6	6.0

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0241	3.2	1.0	16	0350	2.5	0.8
Sa	0831	16.5	5.0	Su	1007	16.3	5.0
	1433	3.8	1.2		1548	7.2	2.2
	2037	19.1	5.8		2159	18.2	5.5
2	0332	3.5	1.1	17	0502	3.4	1.0
Su	0940	15.3	4.7	M	1127	15.4	4.7
	1518	5.9	1.8		1705	9.1	2.8
	2122	18.7	5.7		2313	17.1	5.2
3	0442	3.6	1.1	18	0623	3.5	1.1
M	1103	14.7	4.5	Tu	1251	15.7	4.8
	1622	7.7	2.3		1833	9.7	3.0
	2227	18.3	5.6				
4	0601	3.1	0.9	19	0028	16.8	5.1
Tu	1224	15.1	4.6	W	0734	2.8	0.9
	1756	8.8	2.7		1403	16.7	5.1
	2342	18.5	5.6		1947	9.0	2.7
5	0713	1.7	0.5	20	0135	17.2	5.2
W	1337	16.4	5.0	Th	0828	1.6	0.5
	1916	8.4	2.6		1456	17.9	5.5
					2043	7.8	2.4
6	0055	19.4	5.9	21	0227	18.1	5.5
Th	0814	-0.2	-0.1	F	0912	0.5	0.2
	1435	18.0	5.5		1531	18.9	5.8
	2019	7.1	2.2		2123	6.4	2.0
7	0158	20.7	6.3	22	0309	19.0	5.8
F	0905	-2.0	-0.6	Sa	0946	-0.4	-0.1
	1523	19.7	6.0		1603	19.7	6.0
	2115	5.2	1.6		2158	5.0	1.5
8	0253	22.2	6.8	23	0344	19.8	6.0
Sa	0952	-3.6	-1.1	Su	1019	-1.1	-0.3
	1606	21.2	6.5		1631	20.3	6.2
	2203	3.3	1.0		2230	3.7	1.1
9	0345	23.4	7.1	24	0416	20.4	6.2
Su	1037	-4.6	-1.4	M	1050	-1.5	-0.5
	1647	22.4	6.8		1700	20.7	6.3
	2250	1.5	0.5		2303	2.5	0.8
10	0434	24.1	7.3	25	0448	20.7	6.3
M	1119	-4.8	-1.5	Tu	1120	-1.5	-0.5
	1727	23.1	7.0		1725	21.0	6.4
	2336	0.2	0.1		2335	1.5	0.5
11	0522	24.0	7.3	26	0521	20.8	6.3
Tu	1200	-4.2	-1.3	W	1149	-1.1	-0.3
	1806	23.5	7.2		1750	21.2	6.5
12	0021	-0.6	-0.2	27	0009	0.9	0.3
W	0611	23.3	7.1	Th	0555	20.4	6.2
	1240	-2.8	-0.9		1218	-0.3	-0.1
	1845	23.3	7.1		1814	21.3	6.5
13	0107	-0.6	-0.2	28	0043	0.6	0.2
Th	0701	21.8	6.6	F	0630	19.7	6.0
	1322	-0.7	-0.2		1249	1.0	0.3
	1927	22.5	6.9		1839	21.1	6.4
14	0157	0.0	0.0	29	0120	0.8	0.2
F	0754	19.9	6.1	Sa	0711	18.6	5.7
	1404	1.8	0.5		1320	2.6	0.8
	2010	21.3	6.5		1907	20.7	6.3
15	0250	1.1	0.3	30	0202	1.4	0.4
Sa	0855	17.9	5.5	Su	0800	17.1	5.2
	1451	4.6	1.4		1357	4.6	1.4
	2058	19.8	6.0		1940	19.9	6.1
				31	0254	2.3	0.7
				M	0911	15.7	4.8
					1442	6.8	2.1
					2026	18.8	5.7

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0406	3.1	0.9	16	0548	4.4	1.3
Tu	1044	14.9	4.5	W	1231	15.7	4.8
	1559	8.7	2.7		1812	10.0	3.0
	2140	17.7	5.4				
2	0535	3.0	0.9	17	0010	15.5	4.7
W	1212	15.3	4.7	Th	0706	3.6	1.1
	1745	9.3	2.8		1338	16.8	5.1
	2330	17.6	5.4		1935	8.7	2.7
3	0654	1.8	0.5	18	0121	16.3	5.0
Th	1326	16.8	5.1	F	0803	2.4	0.7
	1908	8.1	2.5		1427	18.0	5.5
					2022	6.9	2.1
4	0052	18.7	5.7	19	0211	17.5	5.3
F	0758	0.0	0.0	Sa	0844	1.3	0.4
	1419	18.6	5.7		1459	19.0	5.8
	2011	6.0	1.8		2059	5.1	1.6
5	0156	20.4	6.2	20	0250	18.7	5.7
Sa	0848	-1.7	-0.5	Su	0917	0.4	0.1
	1504	20.4	6.2		1528	19.9	6.1
	2103	3.5	1.1		2131	3.4	1.0
6	0251	22.1	6.7	21	0325	19.7	6.0
Su	0933	-3.0	-0.9	M	0948	-0.2	-0.1
	1544	21.9	6.7		1554	20.6	6.3
	2149	1.1	0.3		2203	1.8	0.5
7	0338	23.4	7.1	22	0357	20.4	6.2
M	1015	-3.6	-1.1	Tu	1017	-0.4	-0.1
	1619	23.1	7.0		1618	21.2	6.5
	2231	-0.8	-0.2		2236	0.5	0.2
8	0424	24.0	7.3	23	0427	20.9	6.4
Tu	1054	-3.5	-1.1	W	1046	-0.3	-0.1
	1653	23.9	7.3		1641	21.7	6.6
	2315	-2.0	-0.6		2308	-0.6	-0.2
9	0506	23.9	7.3	24	0459	21.0	6.4
W	1133	-2.6	-0.8	Th	1115	0.2	0.1
	1729	24.1	7.3		1704	22.2	6.8
	2355	-2.5	-0.8		2340	-1.2	-0.4
10	0552	23.1	7.0	25	0535	20.8	6.3
Th	1211	-1.0	-0.3	F	1145	1.0	0.3
	1805	23.7	7.2		1729	22.3	6.8
11	0040	-2.1	-0.6	26	0015	-1.3	-0.4
F	0637	21.7	6.6	Sa	0611	20.2	6.2
	1248	1.1	0.3		1218	2.3	0.7
	1840	22.6	6.9		1754	22.1	6.7
12	0125	-1.0	-0.3	27	0053	-0.9	-0.3
Sa	0728	19.9	6.1	Su	0656	19.1	5.8
	1328	3.5	1.1		1256	3.9	1.2
	1920	21.1	6.4		1826	21.4	6.5
13	0213	0.6	0.2	28	0136	0.0	0.0
Su	0825	17.9	5.5	M	0746	17.6	5.4
	1414	6.0	1.8		1336	5.8	1.8
	2005	19.1	5.8		1904	20.2	6.2
14	0311	2.4	0.7	29	0234	1.3	0.4
M	0935	16.2	4.9	Tu	0900	16.2	4.9
	1511	8.4	2.6		1434	7.7	2.3
	2105	17.0	5.2		1957	18.6	5.7
15	0423	3.9	1.2	30	0351	2.5	0.8
Tu	1103	15.4	4.7	W	1033	15.6	4.8
	1635	10.0	3.0		1601	9.0	2.7
	2237	15.6	4.8		2135	17.1	5.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NIKISHKA, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0516	2.7	0.8	16	0617	4.3	1.3
Th	1201	16.3	5.0	F	1252	16.9	5.2
	1740	8.7	2.7		1857	8.1	2.5
	2328	17.1	5.2				
2	0633	1.9	0.6	17	0051	15.6	4.8
F	1305	17.8	5.4	Sa	0716	3.5	1.1
	1857	6.8	2.1		1339	18.0	5.5
					1948	6.1	1.9
3	0051	18.4	5.6	18	0142	16.8	5.1
Sa	0734	0.5	0.2	Su	0801	2.7	0.8
	1355	19.5	5.9		1414	19.0	5.8
	1958	4.2	1.3		2027	4.1	1.2
4	0153	20.1	6.1	19	0224	18.0	5.5
Su	0825	-0.7	-0.2	M	0838	2.1	0.6
	1438	21.2	6.5		1443	19.9	6.1
	2048	1.5	0.5		2100	2.2	0.7
5	0243	21.7	6.6	20	0259	19.1	5.8
M	0909	-1.4	-0.4	Tu	0909	1.7	0.5
	1512	22.6	6.9		1509	20.7	6.3
	2130	-0.7	-0.2		2135	0.5	0.2
6	0327	22.8	6.9	21	0331	20.0	6.1
Tu	0949	-1.5	-0.5	W	0941	1.6	0.5
	1546	23.6	7.2		1534	21.6	6.6
	2213	-2.4	-0.7		2207	-0.9	-0.3
7	0409	23.3	7.1	22	0405	20.6	6.3
W	1026	-1.0	-0.3	Th	1012	1.7	0.5
	1619	24.1	7.3		1557	22.3	6.8
	2251	-3.3	-1.0		2239	-2.0	-0.6
8	0451	23.2	7.1	23	0439	21.0	6.4
Th	1105	0.0	0.0	F	1045	2.1	0.6
	1652	24.1	7.3		1623	22.9	7.0
	2333	-3.4	-1.0		2316	-2.6	-0.8
9	0532	22.5	6.9	24	0518	21.0	6.4
F	1142	1.5	0.5	Sa	1120	2.8	0.9
	1726	23.5	7.2		1653	23.1	7.0
					2355	-2.6	-0.8
10	0014	-2.7	-0.8	25	0558	20.5	6.2
Sa	0616	21.3	6.5	Su	1158	3.8	1.2
	1220	3.2	1.0		1726	22.7	6.9
	1759	22.3	6.8				
11	0051	-1.4	-0.4	26	0035	-2.1	-0.6
Su	0704	19.8	6.0	M	0646	19.6	6.0
	1259	5.2	1.6		1240	5.1	1.6
	1835	20.6	6.3		1805	21.8	6.6
12	0141	0.4	0.1	27	0125	-1.0	-0.3
M	0800	18.2	5.5	Tu	0746	18.4	5.6
	1346	7.1	2.2		1333	6.5	2.0
	1917	18.6	5.7		1851	20.3	6.2
13	0234	2.3	0.7	28	0223	0.3	0.1
Tu	0908	16.7	5.1	W	0855	17.5	5.3
	1444	8.9	2.7		1439	7.6	2.3
	2015	16.5	5.0		2000	18.5	5.6
14	0342	3.8	1.2	29	0335	1.6	0.5
W	1029	15.9	4.8	Th	1017	17.2	5.2
	1604	9.9	3.0		1603	8.1	2.5
	2159	14.9	4.5		2143	17.1	5.2
15	0501	4.6	1.4	30	0449	2.2	0.7
Th	1148	16.1	4.9	F	1131	17.8	5.4
	1738	9.7	3.0		1727	7.2	2.2
	2336	14.8	4.5		2322	17.2	5.2
				31	0603	2.2	0.7
				Sa	1233	18.9	5.8
					1841	5.1	1.6

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0038	18.2	5.5	16	0058	15.9	4.8
Su	0705	1.7	0.5	M	0705	4.6	1.4
	1323	20.3	6.2		1321	18.6	5.7
	1939	2.6	0.8		1947	3.8	1.2
2	0139	19.5	5.9	17	0147	17.0	5.2
M	0758	1.3	0.4	Tu	0750	4.4	1.3
	1406	21.6	6.6		1353	19.6	6.0
	2030	0.3	0.1		2027	1.9	0.6
3	0230	20.7	6.3	18	0230	18.1	5.5
Tu	0843	1.3	0.4	W	0830	4.3	1.3
	1440	22.7	6.9		1422	20.6	6.3
	2112	-1.6	-0.5		2105	0.1	0.0
4	0315	21.6	6.6	19	0308	19.2	5.9
W	0924	1.6	0.5	Th	0905	4.2	1.3
	1515	23.4	7.1		1451	21.6	6.6
	2154	-2.8	-0.9		2142	-1.5	-0.5
5	0357	22.0	6.7	20	0346	20.1	6.1
Th	1002	2.2	0.7	F	0944	4.1	1.2
	1547	23.6	7.2		1519	22.5	6.9
	2234	-3.3	-1.0		2219	-2.6	-0.8
6	0437	22.0	6.7	21	0426	20.7	6.3
F	1041	3.0	0.9	Sa	1023	4.2	1.3
	1620	23.4	7.1		1554	23.2	7.1
	2312	-3.1	-0.9		2258	-3.3	-1.0
7	0517	21.6	6.6	22	0507	21.0	6.4
Sa	1120	4.0	1.2	Su	1104	4.4	1.3
	1655	22.7	6.9		1630	23.4	7.1
	2352	-2.4	-0.7		2341	-3.5	-1.1
8	0602	20.9	6.4	23	0553	20.9	6.4
Su	1158	5.1	1.6	M	1147	4.7	1.4
	1730	21.6	6.6		1713	23.1	7.0
9	0032	-1.3	-0.4	24	0027	-3.1	-0.9
M	0648	19.9	6.1	Tu	0643	20.5	6.2
	1240	6.3	1.9		1237	5.2	1.6
	1806	20.2	6.2		1800	22.1	6.7
10	0117	0.1	0.0	25	0115	-2.2	-0.7
Tu	0740	18.8	5.7	W	0738	19.8	6.0
	1327	7.5	2.3		1333	5.8	1.8
	1848	18.5	5.6		1859	20.7	6.3
11	0205	1.6	0.5	26	0210	-0.9	-0.3
W	0839	17.7	5.4	Th	0842	19.3	5.9
	1421	8.4	2.6		1436	6.1	1.9
	1946	16.7	5.1		2009	19.0	5.8
12	0301	3.0	0.9	27	0311	0.5	0.2
Th	0948	17.0	5.2	F	0948	19.1	5.8
	1530	9.0	2.7		1547	6.1	1.9
	2114	15.2	4.6		2137	17.8	5.4
13	0405	4.1	1.2	28	0417	1.9	0.6
F	1054	16.8	5.1	Sa	1052	19.3	5.9
	1648	8.7	2.7		1700	5.3	1.6
	2245	14.6	4.5		2301	17.3	5.3
14	0512	4.7	1.4	29	0524	3.0	0.9
Sa	1154	17.1	5.2	Su	1151	19.8	6.0
	1801	7.5	2.3		1813	3.8	1.2
	2359	15.0	4.6				
15	0614	4.8	1.5	30	0017	17.7	5.4
Su	1241	17.8	5.4	M	0628	3.7	1.1
	1900	5.8	1.8		1241	20.6	6.3
					1915	1.9	0.6

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0121	18.4	5.6	16	0110	15.7	4.8
Tu	0724	4.1	1.2	W	0655	6.9	2.1
	1329	21.3	6.5		1257	19.0	5.8
	2009	0.1	0.0		1950	2.2	0.7
2	0216	19.3	5.9	17	0201	16.9	5.2
W	0816	4.5	1.4	Th	0747	6.9	2.1
	1410	21.9	6.7		1334	20.0	6.1
	2056	-1.2	-0.4		2036	0.4	0.1
3	0305	20.1	6.1	18	0246	18.1	5.5
Th	0901	4.8	1.5	F	0835	6.6	2.0
	1448	22.3	6.8		1414	21.1	6.4
	2138	-2.1	-0.6		2119	-1.3	-0.4
4	0347	20.6	6.3	19	0332	19.4	5.9
F	0944	5.1	1.6	Sa	0921	6.0	1.8
	1524	22.3	6.8		1453	22.2	6.8
	2217	-2.4	-0.7		2202	-2.8	-0.9
5	0429	20.9	6.4	20	0416	20.4	6.2
Sa	1024	5.5	1.7	Su	1007	5.4	1.6
	1600	22.2	6.8		1536	23.1	7.0
	2257	-2.4	-0.7		2245	-3.8	-1.2
6	0510	20.9	6.4	21	0459	21.2	6.5
Su	1104	5.8	1.8	M	1054	4.8	1.5
	1636	21.7	6.6		1621	23.6	7.2
	2337	-2.0	-0.6		2329	-4.3	-1.3
7	0550	20.7	6.3	22	0545	21.6	6.6
M	1145	6.0	1.8	Tu	1140	4.2	1.3
	1714	21.0	6.4		1710	23.5	7.2
8	0015	-1.4	-0.4	23	0015	-4.2	-1.3
Tu	0635	20.3	6.2	W	0633	21.7	6.6
	1227	6.4	2.0		1230	3.8	1.2
	1753	20.1	6.1		1803	22.8	6.9
9	0056	-0.5	-0.2	24	0103	-3.5	-1.1
W	0720	19.6	6.0	Th	0722	21.6	6.6
	1312	6.7	2.0		1322	3.6	1.1
	1835	18.9	5.8		1900	21.7	6.6
10	0138	0.5	0.2	25	0153	-2.1	-0.6
Th	0809	18.9	5.8	F	0813	21.3	6.5
	1357	7.0	2.1		1419	3.6	1.1
	1927	17.5	5.3		2005	20.1	6.1
11	0221	1.8	0.5	26	0242	-0.2	-0.1
F	0858	18.2	5.5	Sa	0906	20.8	6.3
	1452	7.2	2.2		1521	3.7	1.1
	2031	16.2	4.9		2116	18.5	5.6
12	0309	3.1	0.9	27	0339	2.0	0.6
Sa	0951	17.7	5.4	Su	1004	20.4	6.2
	1551	7.2	2.2		1628	3.5	1.1
	2143	15.1	4.6		2233	17.3	5.3
13	0402	4.5	1.4	28	0440	4.1	1.2
Su	1042	17.5	5.3	M	1101	20.1	6.1
	1658	6.6	2.0		1740	3.0	0.9
	2259	14.7	4.5		2350	16.9	5.2
14	0500	5.7	1.7	29	0546	5.9	1.8
M	1130	17.7	5.4	Tu	1158	20.0	6.1
	1801	5.5	1.7		1849	2.0	0.6
15	0009	14.9	4.5	30	0102	17.1	5.2
Tu	0559	6.5	2.0	W	0654	6.9	2.1
	1215	18.2	5.5		1254	20.1	6.1
	1900	4.0	1.2		1950	0.9	0.3
				31	0206	17.9	5.5
				Th	0754	7.3	2.2
					1345	20.3	6.2
					2041	-0.1	0.0

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0231	-4.9	-1.5	16	0235	-1.2	-0.4
Th	0819	29.7	9.1	F	0820	28.3	8.6
	1435	3.6	1.1		1434	4.8	1.5
	1951	32.0	9.8		2000	28.5	8.7
2	0317	-5.1	-1.6	17	0307	-1.1	-0.3
F	0901	30.1	9.2	Sa	0853	28.5	8.7
	1524	2.8	0.9		1510	4.2	1.3
	2041	31.6	9.6		2035	28.3	8.6
3	0400	-4.6	-1.4	18	0336	-0.7	-0.2
Sa	0944	30.4	9.3	Su	0926	28.6	8.7
	1613	2.2	0.7		1549	3.9	1.2
	2134	30.6	9.3		2113	27.7	8.4
4	0440	-3.4	-1.0	19	0406	-0.1	0.0
Su	1027	30.4	9.3	M	0957	28.5	8.7
	1701	2.1	0.6		1629	3.6	1.1
	2226	29.1	8.9		2152	26.9	8.2
5	0520	-1.5	-0.5	20	0435	0.7	0.2
M	1114	30.1	9.2	Tu	1026	28.3	8.6
	1751	2.4	0.7		1709	3.3	1.0
	2321	27.1	8.3		2235	25.9	7.9
6	0602	1.0	0.3	21	0512	2.0	0.6
Tu	1204	29.2	8.9	W	1101	28.1	8.6
	1846	2.8	0.9		1754	3.1	0.9
					2324	24.8	7.6
7	0023	25.0	7.6	22	0553	3.9	1.2
W	0648	3.8	1.2	Th	1140	27.7	8.4
	1258	28.0	8.5		1846	2.9	0.9
	1948	3.1	0.9				
8	0140	23.4	7.1	23	0024	23.7	7.2
Th	0744	6.7	2.0	F	0643	6.2	1.9
	1355	26.7	8.1		1233	27.1	8.3
	2054	3.0	0.9		1950	2.6	0.8
9	0319	23.1	7.0	24	0139	22.9	7.0
F	0858	8.7	2.7	Sa	0747	8.3	2.5
	1455	25.7	7.8		1339	26.6	8.1
	2210	2.3	0.7		2103	1.7	0.5
10	0436	24.3	7.4	25	0327	23.4	7.1
Sa	1020	9.3	2.8	Su	0908	9.1	2.8
	1554	25.3	7.7		1454	26.8	8.2
	2313	1.2	0.4		2217	0.6	0.2
11	0531	25.7	7.8	26	0449	25.3	7.7
Su	1124	8.7	2.7	M	1020	8.4	2.6
	1646	25.5	7.8		1607	27.8	8.5
					2334	-0.9	-0.3
12	0003	0.2	0.1	27	0551	27.2	8.3
M	0616	26.6	8.1	Tu	1131	7.2	2.2
	1211	7.9	2.4		1710	29.3	8.9
	1731	26.1	8.0				
13	0046	-0.5	-0.2	28	0039	-2.8	-0.9
Tu	0651	27.1	8.3	W	0640	28.6	8.7
	1249	7.1	2.2		1241	5.3	1.6
	1810	26.9	8.2		1808	30.7	9.4
14	0124	-0.9	-0.3	29	0131	-4.4	-1.3
W	0720	27.4	8.4	Th	0725	29.5	9.0
	1325	6.3	1.9		1338	3.3	1.0
	1846	27.8	8.5		1857	31.7	9.7
15	0201	-1.1	-0.3	30	0217	-5.2	-1.6
Th	0749	27.8	8.5	F	0804	30.2	9.2
	1358	5.5	1.7		1426	1.6	0.5
	1924	28.4	8.7		1946	32.3	9.8
				31	0259	-5.2	-1.6
				Sa	0840	30.8	9.4
					1512	0.3	0.1
					2033	32.2	9.8

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0338	-4.5	-1.4	16	0313	-0.7	-0.2
Su	0917	31.3	9.5	M	0855	29.8	9.1
	1555	-0.3	-0.1		1532	1.3	0.4
	2120	31.3	9.5		2057	29.1	8.9
2	0415	-3.0	-0.9	17	0341	0.0	0.0
M	0954	31.4	9.6	Tu	0921	29.9	9.1
	1639	-0.2	-0.1		1611	0.9	0.3
	2205	29.8	9.1		2134	28.3	8.6
3	0448	-0.9	-0.3	18	0411	1.0	0.3
Tu	1032	30.8	9.4	W	0950	29.8	9.1
	1720	0.5	0.2		1649	0.8	0.2
	2251	27.7	8.4		2215	27.2	8.3
4	0521	1.8	0.5	19	0445	2.5	0.8
W	1112	29.4	9.0	Th	1021	29.5	9.0
	1805	1.6	0.5		1732	0.9	0.3
	2343	25.3	7.7		2301	25.9	7.9
5	0557	4.9	1.5	20	0524	4.5	1.4
Th	1154	27.5	8.4	F	1101	28.7	8.7
	1852	2.9	0.9		1818	1.3	0.4
6	0047	23.2	7.1	21	0000	24.3	7.4
F	0644	8.2	2.5	Sa	0612	7.0	2.1
	1250	25.3	7.7		1151	27.4	8.4
	1951	3.9	1.2		1918	1.9	0.6
7	0227	22.1	6.7	22	0118	23.2	7.1
Sa	0755	10.8	3.3	Su	0718	9.4	2.9
	1357	23.7	7.2		1303	26.0	7.9
	2103	4.1	1.2		2033	2.1	0.6
8	0407	23.2	7.1	23	0314	23.7	7.2
Su	0938	11.2	3.4	M	0850	10.0	3.0
	1511	23.1	7.0		1432	25.8	7.9
	2230	3.2	1.0		2156	1.4	0.4
9	0508	24.9	7.6	24	0434	25.7	7.8
M	1057	9.7	3.0	Tu	1012	8.6	2.6
	1622	23.7	7.2		1601	27.0	8.2
	2332	1.4	0.4		2324	-0.4	-0.1
10	0555	26.2	8.0	25	0534	27.7	8.4
Tu	1148	7.8	2.4	W	1135	6.3	1.9
	1716	25.0	7.6		1707	28.9	8.8
11	0019	0.0	0.0	26	0025	-2.6	-0.8
W	0630	27.0	8.2	Th	0624	29.2	8.9
	1229	6.2	1.9		1237	3.5	1.1
	1758	26.5	8.1		1800	30.6	9.3
12	0101	-1.0	-0.3	27	0115	-4.0	-1.2
Th	0659	27.5	8.4	F	0705	30.1	9.2
	1307	4.9	1.5		1328	1.2	0.4
	1835	27.8	8.5		1849	31.7	9.7
13	0138	-1.5	-0.5	28	0158	-4.3	-1.3
F	0724	28.2	8.6	Sa	0741	30.8	9.4
	1343	3.8	1.2		1413	-0.6	-0.2
	1909	28.8	8.8		1934	32.3	9.8
14	0213	-1.6	-0.5				
Sa	0755	28.9	8.8				
	1418	2.8	0.9				
	1947	29.4	9.0				
15	0244	-1.3	-0.4				
Su	0825	29.5	9.0				
	1456	1.9	0.6				
	2022	29.5	9.0				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0237	-3.8	-1.2	16	0215	-0.2	-0.1
Su	0813	31.4	9.6	M	0752	30.3	9.2
	1455	-1.6	-0.5		1436	-0.2	-0.1
	2018	32.1	9.8		2004	30.1	9.2
2	0312	-2.7	-0.8	17	0246	0.5	0.2
M	0844	31.9	9.7	Tu	0820	30.8	9.4
	1534	-1.8	-0.5		1513	-0.9	-0.3
	2059	31.4	9.6		2041	29.8	9.1
3	0344	-1.0	-0.3	18	0315	1.3	0.4
Tu	0918	31.8	9.7	W	0846	31.0	9.4
	1611	-1.4	-0.4		1551	-1.2	-0.4
	2142	29.9	9.1		2120	29.0	8.8
4	0413	1.0	0.3	19	0345	2.3	0.7
W	0950	30.9	9.4	Th	0918	30.8	9.4
	1648	-0.4	-0.1		1630	-1.0	-0.3
	2223	28.0	8.5		2202	27.9	8.5
5	0442	3.4	1.0	20	0421	3.8	1.2
Th	1019	29.3	8.9	F	0952	30.2	9.2
	1724	0.9	0.3		1712	-0.4	-0.1
	2309	25.9	7.9		2250	26.5	8.1
6	0514	6.1	1.9	21	0501	5.8	1.8
F	1051	27.1	8.3	Sa	1032	28.9	8.8
	1804	2.3	0.7		1757	0.6	0.2
					2349	25.1	7.7
7	0005	23.9	7.3	22	0551	8.0	2.4
Sa	0555	9.0	2.7	Su	1128	27.0	8.2
	1128	24.6	7.5		1855	1.7	0.5
	1852	3.8	1.2				
8	0117	22.5	6.9	23	0115	24.2	7.4
Su	0655	11.6	3.5	M	0704	9.9	3.0
	1252	22.3	6.8		1247	25.3	7.7
	2001	4.9	1.5		2014	2.4	0.7
9	0318	22.6	6.9	24	0255	24.8	7.6
M	0906	11.9	3.6	Tu	0847	9.6	2.9
	1429	21.6	6.6		1431	25.2	7.7
	2133	4.4	1.3		2143	1.8	0.5
10	0430	24.3	7.4	25	0413	26.7	8.1
Tu	1025	9.6	2.9	W	1017	7.1	2.2
	1556	22.7	6.9		1554	26.8	8.2
	2249	2.6	0.8		2307	0.0	0.0
11	0519	25.9	7.9	26	0510	28.5	8.7
W	1118	7.1	2.2	Th	1131	3.9	1.2
	1654	24.6	7.5		1659	28.7	8.7
	2346	0.8	0.2				
12	0557	27.0	8.2	27	0005	-1.7	-0.5
Th	1203	5.0	1.5	F	0558	29.8	9.1
	1737	26.4	8.0		1227	1.1	0.3
					1752	30.2	9.2
13	0029	-0.4	-0.1	28	0052	-2.3	-0.7
F	0625	27.9	8.5	Sa	0638	30.6	9.3
	1242	3.4	1.0		1313	-0.8	-0.2
	1814	27.9	8.5		1838	31.0	9.4
14	0108	-0.8	-0.2	29	0133	-1.9	-0.6
Sa	0653	28.7	8.7	Su	0711	31.0	9.4
	1320	2.0	0.6		1355	-1.9	-0.6
	1850	29.1	8.9		1921	31.3	9.5
15	0143	-0.6	-0.2	30	0211	-0.9	-0.3
Su	0722	29.6	9.0	M	0740	31.5	9.6
	1358	0.8	0.2		1434	-2.3	-0.7
	1926	29.8	9.1		2002	31.2	9.5
				31	0243	0.5	0.2
				Tu	0808	31.7	9.7
					1510	-2.1	-0.6
					2041	30.6	9.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height	
	h m	ft	m
1	0312	1.9	0.6
W	0838	31.4	9.6
	1544	-1.5	-0.5
	2121	29.5	9.0
2	0339	3.4	1.0
Th	0907	30.3	9.2
	1616	-0.6	-0.2
	2158	28.1	8.6
3	0408	5.1	1.6
F	0936	28.7	8.7
	1649	0.5	0.2
	2240	26.5	8.1
4	0442	7.1	2.2
Sa	1005	26.6	8.1
	1725	1.7	0.5
	2333	24.9	7.6
5	0524	9.2	2.8
Su	1042	24.3	7.4
	1810	3.2	1.0
6	0035	23.7	7.2
M	0618	11.1	3.4
	1146	21.9	6.7
	1911	4.7	1.4
7	0151	23.3	7.1
Tu	0816	11.6	3.5
	1347	21.1	6.4
	2045	4.9	1.5
8	0327	24.2	7.4
W	0945	9.1	2.8
	1514	22.2	6.8
	2204	3.6	1.1
9	0430	25.7	7.8
Th	1041	6.3	1.9
	1620	24.1	7.3
	2302	2.2	0.7
10	0508	27.0	8.2
F	1129	4.0	1.2
	1707	26.0	7.9
	2350	1.4	0.4
11	0542	28.0	8.5
Sa	1211	2.1	0.6
	1747	27.5	8.4
12	0032	1.3	0.4
Su	0614	29.0	8.8
	1251	0.6	0.2
	1826	28.7	8.7
13	0108	1.5	0.5
M	0645	29.9	9.1
	1333	-0.8	-0.2
	1905	29.4	9.0
14	0142	1.9	0.6
Tu	0714	30.8	9.4
	1412	-1.8	-0.5
	1946	29.8	9.1
15	0216	2.4	0.7
W	0742	31.4	9.6
	1454	-2.5	-0.8
	2026	29.6	9.0
16	0249	3.1	0.9
Th	0814	31.5	9.6
	1534	-2.6	-0.8
	2109	29.0	8.8
17	0325	4.0	1.2
F	0851	31.1	9.5
	1614	-2.1	-0.6
	2155	28.2	8.6
18	0405	5.2	1.6
Sa	0928	30.1	9.2
	1656	-1.2	-0.4
	2245	27.1	8.3
19	0451	6.7	2.0
Su	1017	28.4	8.7
	1744	0.0	0.0
	2348	26.2	8.0
20	0549	8.3	2.5
M	1119	26.5	8.1
	1844	1.3	0.4
21	0109	25.8	7.9
Tu	0711	8.9	2.7
	1246	25.0	7.6
	2001	2.0	0.6
22	0230	26.5	8.1
W	0847	7.3	2.2
	1426	25.3	7.7
	2122	1.8	0.5
23	0341	27.8	8.5
Th	1009	4.4	1.3
	1541	26.6	8.1
	2238	1.0	0.3
24	0438	29.1	8.9
F	1115	1.4	0.4
	1646	28.0	8.5
	2337	0.4	0.1
25	0526	29.9	9.1
Sa	1208	-0.8	-0.2
	1740	29.0	8.8
26	0025	0.5	0.2
Su	0604	30.2	9.2
	1254	-2.0	-0.6
	1829	29.5	9.0
27	0107	1.4	0.4
M	0637	30.4	9.3
	1336	-2.3	-0.7
	1909	29.7	9.1
28	0145	2.7	0.8
Tu	0704	30.6	9.3
	1414	-2.0	-0.6
	1950	29.6	9.0
29	0215	3.8	1.2
W	0732	30.6	9.3
	1448	-1.5	-0.5
	2027	29.3	8.9
30	0241	4.7	1.4
Th	0801	30.2	9.2
	1518	-0.9	-0.3
	2101	28.7	8.7

MAY

Day	Time	Height	
	h m	ft	m
1	0309	5.4	1.6
F	0832	29.2	8.9
	1549	-0.3	-0.1
	2139	27.8	8.5
2	0341	6.3	1.9
Sa	0901	27.7	8.4
	1621	0.4	0.1
	2219	26.8	8.2
3	0419	7.4	2.3
Su	0936	26.0	7.9
	1658	1.3	0.4
	2304	25.8	7.9
4	0501	8.6	2.6
M	1019	24.1	7.3
	1740	2.4	0.7
5	0002	25.0	7.6
Tu	0554	9.6	2.9
	1122	22.2	6.8
	1831	3.8	1.2
6	0106	24.6	7.5
W	0706	9.9	3.0
	1253	21.4	6.5
	1944	4.9	1.5
7	0213	24.9	7.6
Th	0854	8.2	2.5
	1420	22.0	6.7
	2112	4.8	1.5
8	0319	25.7	7.8
F	0956	5.5	1.7
	1530	23.4	7.1
	2212	4.2	1.3
9	0412	26.8	8.2
Sa	1046	3.2	1.0
	1630	25.0	7.6
	2303	3.9	1.2
10	0454	27.8	8.5
Su	1134	1.2	0.4
	1718	26.5	8.1
	2347	4.0	1.2
11	0529	28.8	8.8
M	1220	-0.4	-0.1
	1803	27.6	8.4
12	0029	4.1	1.2
Tu	0603	29.8	9.1
	1306	-1.7	-0.5
	1848	28.5	8.7
13	0108	4.2	1.3
W	0635	30.8	9.4
	1351	-2.8	-0.9
	1931	28.9	8.8
14	0149	4.3	1.3
Th	0710	31.4	9.6
	1435	-3.3	-1.0
	2017	29.0	8.8
15	0231	4.6	1.4
F	0749	31.4	9.6
	1519	-3.4	-1.0
	2102	28.8	8.8
16	0313	5.0	1.5
Sa	0831	30.9	9.4
	1603	-3.0	-0.9
	2148	28.4	8.7
17	0400	5.6	1.7
Su	0920	29.7	9.1
	1648	-2.2	-0.7
	2240	28.0	8.5
18	0451	6.3	1.9
M	1015	28.2	8.6
	1736	-1.1	-0.3
	2341	27.7	8.4
19	0554	6.7	2.0
Tu	1122	26.6	8.1
	1834	0.2	0.1
20	0047	27.7	8.4
W	0711	6.2	1.9
	1244	25.5	7.8
	1939	1.3	0.4
21	0156	28.0	8.5
Th	0829	4.4	1.3
	1407	25.3	7.7
	2047	2.2	0.7
22	0302	28.5	8.7
F	0943	2.2	0.7
	1524	25.8	7.9
	2201	2.8	0.9
23	0359	29.0	8.8
Sa	1051	0.1	0.0
	1633	26.7	8.1
	2307	3.3	1.0
24	0449	29.1	8.9
Su	1145	-1.4	-0.4
	1732	27.4	8.4
	2359	3.9	1.2
25	0531	29.0	8.8
M	1233	-2.0	-0.6
	1821	27.9	8.5
26	0043	4.8	1.5
Tu	0603	28.9	8.8
	1316	-1.8	-0.5
	1903	28.0	8.5
27	0120	5.7	1.7
W	0631	29.0	8.8
	1353	-1.3	-0.4
	1939	28.1	8.6
28	0150	6.3	1.9
Th	0701	29.1	8.9
	1427	-0.8	-0.2
	2013	28.0	8.5
29	0217	6.4	2.0
F	0733	28.8	8.8
	1458	-0.4	-0.1
	2046	27.9	8.5
30	0247	6.4	2.0
Sa	0807	28.0	8.5
	1528	-0.2	-0.1
	2121	27.5	8.4
31	0323	6.6	2.0
Su	0842	26.9	8.2
	1601	0.2	0.1
	2200	27.1	8.3

JUNE

Day	Time	Height	
	h m	ft	m
1	0402	6.9	2.1
M	0921	25.7	7.8
	1635	0.7	0.2
	2242	26.6	8.1
2	0445	7.2	2.2
Tu	1006	24.4	7.4
	1714	1.5	0.5
	2328	26.1	8.0
3	0533	7.4	2.3
W	1104	23.2	7.1
	1756	2.7	0.8
4	0021	25.8	7.9
Th	0628	7.3	2.2
	1204	22.4	6.8
	1847	4.1	1.2
5	0119	25.7	7.8
F	0740	6.5	2.0
	1319	22.2	6.8
	1947	5.5	1.7
6	0217	25.9	7.9
Sa	0900	4.7	1.4
	1434	22.7	6.9
	2105	6.3	1.9
7	0311	26.5	8.1
Su	0959	2.6	0.8
	1548	23.9	7.3
	2207	6.4	2.0
8	0359	27.3	8.3
M	1054	0.7	0.2
	1652	25.2	7.7
	2259	6.4	2.0
9	0442	28.3	8.6
Tu	1147	-0.8	-0.2
	1747	26.5	8.1
	2347	6.2	1.9
10	0523	29.4	9.0
W	1240	-2.1	-0.6
	1837	27.5	8.4
11	0038	5.8	1.8
Th	0603	30.3	9.2
	1331	-3.1	-0.9
	1923	28.2	8.6
12	0128	5.4	1.6
F	0648	31.0	9.4
	1420	-3.8	-1.2
	2007	28.5	8.7
13	0217	5.0	1.5
Sa	0733	31.2	9.5
	1507	-4.2	-1.3
	2053	28.8	8.8
14	0308	4.6	1.4
Su	0825	30.8	9.4
	1552	-4.1	-1.2
	2139	29.0	8.8
15	0358	4.3	1.3
M	0917	30.0	9.1
	1637	-3.5	-1.1
	2227	29.2	8.9
16	0451	4.0	1.2
Tu	1013	28.8	8.8
	1723	-2.4	-0.7
	2320	29.3	8.9
17	0548	3.6	1.1
W	1114	27.4	8.4
	1812	-0.8	-0.2
18	0015	29.2	8.9
Th	0649	3.1	0.9
	1223	26.0	7.9
	1905	1.2	0.4
19	0115	29.0	8.8
F	0757	2.4	0.7
	1340	24.9	7.6
	2006	3.4	1.0
20	0215	28.5	8.7
Sa	0908	1.4	0.4
	1503	24.6	7.5
	2115	5.3	1.6
21	0314	27.9	8.5
Su	1020	0.3	0.1
	1622	25.2	7.7
	2230	6.4	2.0
22	0409	27.4	8.4
M	1121	-0.6	-0.2
	1723	26.1	8.0
	2332	6.9	2.1
23	0457	27.1	8.3
Tu	1211	-1.1	-0.3
	1811	26.8	8.2
24	0021	7.1	2.2
W	0534	27.1	8.3
	1256	-1.1	-0.3
	1853	27.0	8.2
25	0101	7.2	2.2
Th	0611	27.3	8.3
	1335	-0.9	-0.3
	1927	27.2	8.3
26	0134	7.1	2.2
F	0644	27.7	8.4
	1409	-0.6	-0.2
	1957	27.3	8.3
27	0204	6.7	2.0
Sa	0720	27.8	8.5
	1441	-0.5	-0.2
	2027	27.5	8.4
28	0235	6.1	1.9
Su	0758	27.6	8.4
	1513	-0.5	-0.2
	2102	27.6	8.4
29	0310	5.7	1.7
M	0833	27.1	8.3
	1544	-0.3	-0.1
	2138	27.6	8.4
30	0350	5.4	1.6
Tu	0913	26.4	8.0
	1616	0.1	0.0
	2213	27.5	8.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ANCHORAGE, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0429	5.1	1.6	16	0527	0.8	0.2
W	0952	25.5	7.8	Th	1056	28.3	8.6
	1650	0.8	0.2		1741	-0.5	-0.2
	2251	27.2	8.3		2336	30.1	9.2
2	0514	4.9	1.5	17	0620	1.1	0.3
Th	1040	24.6	7.5	F	1157	26.3	8.0
	1725	1.9	0.6		1826	2.3	0.7
	2327	26.9	8.2				
3	0601	4.6	1.4	18	0030	29.0	8.8
F	1133	23.7	7.2	Sa	0718	1.6	0.5
	1805	3.5	1.1		1308	24.4	7.4
					1917	5.5	1.7
4	0012	26.5	8.1	19	0126	27.5	8.4
Sa	0654	4.2	1.3	Su	0821	2.1	0.6
	1231	22.9	7.0		1439	23.5	7.2
	1854	5.4	1.6		2027	8.1	2.5
5	0103	26.2	8.0	20	0227	26.2	8.0
Su	0800	3.5	1.1	M	0937	2.0	0.6
	1342	22.6	6.9		1607	24.1	7.3
	1953	7.3	2.2		2154	9.2	2.8
6	0203	26.1	8.0	21	0327	25.3	7.7
M	0910	2.2	0.7	Tu	1052	1.2	0.4
	1508	23.0	7.0		1710	25.4	7.7
	2108	8.3	2.5		2307	8.8	2.7
7	0303	26.6	8.1	22	0429	25.2	7.7
Tu	1014	0.7	0.2	W	1147	0.2	0.1
	1631	24.4	7.4		1800	26.4	8.0
	2217	8.1	2.5				
8	0359	27.6	8.4	23	0000	7.9	2.4
W	1118	-0.6	-0.2	Th	0518	25.6	7.8
	1734	26.0	7.9		1233	-0.4	-0.1
	2315	7.4	2.3		1837	26.9	8.2
9	0452	28.8	8.8	24	0041	7.1	2.2
Th	1219	-1.9	-0.6	F	0600	26.4	8.0
	1827	27.2	8.3		1313	-0.8	-0.2
					1910	27.1	8.3
10	0017	6.5	2.0	25	0117	6.3	1.9
F	0545	29.9	9.1	Sa	0636	27.3	8.3
	1317	-3.2	-1.0		1348	-1.0	-0.3
	1913	28.1	8.6		1936	27.4	8.4
11	0116	5.3	1.6	26	0151	5.5	1.7
Sa	0637	30.9	9.4	Su	0714	28.0	8.5
	1408	-4.3	-1.3		1422	-1.1	-0.3
	1956	28.8	8.8		2005	27.9	8.5
12	0211	4.0	1.2	27	0223	4.7	1.4
Su	0728	31.4	9.6	M	0750	28.3	8.6
	1454	-4.9	-1.5		1454	-1.0	-0.3
	2038	29.4	9.0		2036	28.4	8.7
13	0301	2.7	0.8	28	0257	3.9	1.2
M	0820	31.5	9.6	Tu	0824	28.3	8.6
	1537	-4.9	-1.5		1525	-0.7	-0.2
	2121	30.0	9.1		2109	28.6	8.7
14	0350	1.6	0.5	29	0334	3.3	1.0
Tu	0910	31.0	9.4	W	0901	27.8	8.5
	1619	-4.2	-1.3		1553	-0.1	0.0
	2203	30.5	9.3		2139	28.6	8.7
15	0439	1.0	0.3	30	0411	2.9	0.9
W	1002	29.9	9.1	Th	0936	27.1	8.3
	1701	-2.8	-0.9		1621	0.8	0.2
	2248	30.6	9.3		2211	28.4	8.7
				31	0451	2.6	0.8
				F	1016	26.1	8.0
					1653	2.0	0.6
					2240	28.1	8.6

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0533	2.5	0.8	16	0633	1.7	0.5
Sa	1101	25.0	7.6	Su	1231	24.3	7.4
	1730	3.8	1.2		1824	7.6	2.3
	2314	27.6	8.4				
2	0621	2.4	0.7	17	0030	26.1	8.0
Su	1157	23.8	7.3	M	0728	3.1	0.9
	1815	6.0	1.8		1357	23.0	7.0
					1934	10.5	3.2
3	0002	26.8	8.2	18	0140	24.1	7.3
M	0716	2.5	0.8	Tu	0837	3.9	1.2
	1306	22.8	6.9		1540	23.5	7.2
	1910	8.3	2.5		2124	11.2	3.4
4	0102	26.0	7.9	19	0251	23.3	7.1
Tu	0826	2.1	0.6	W	1007	3.5	1.1
	1438	22.8	6.9		1646	25.1	7.7
	2027	9.6	2.9		2244	9.6	2.9
5	0219	26.0	7.9	20	0407	23.8	7.3
W	0938	1.2	0.4	Th	1117	1.8	0.5
	1617	24.3	7.4		1735	26.4	8.0
	2148	9.1	2.8		2337	7.6	2.3
6	0330	26.9	8.2	21	0505	25.1	7.7
Th	1052	0.0	0.0	F	1203	0.3	0.1
	1721	26.3	8.0		1814	27.2	8.3
	2257	7.7	2.3				
7	0439	28.4	8.7	22	0019	5.9	1.8
F	1206	-1.6	-0.5	Sa	0546	26.5	8.1
	1813	27.8	8.5		1245	-0.7	-0.2
					1843	27.7	8.4
8	0008	6.0	1.8	23	0057	4.7	1.4
Sa	0539	30.0	9.1	Su	0622	27.8	8.5
	1303	-3.3	-1.0		1322	-1.2	-0.4
	1859	29.0	8.8		1909	28.2	8.6
9	0109	3.9	1.2	24	0130	3.6	1.1
Su	0632	31.4	9.6	M	0658	28.8	8.8
	1351	-4.5	-1.4		1356	-1.2	-0.4
	1938	29.8	9.1		1936	28.9	8.8
10	0202	1.9	0.6	25	0204	2.7	0.8
M	0722	32.2	9.8	Tu	0731	29.4	9.0
	1436	-4.9	-1.5		1428	-0.9	-0.3
	2015	30.6	9.3		2006	29.5	9.0
11	0249	0.2	0.1	26	0240	1.9	0.6
Tu	0809	32.4	9.9	W	0808	29.5	9.0
	1516	-4.6	-1.4		1459	-0.1	0.0
	2052	31.3	9.5		2036	29.9	9.1
12	0334	-0.9	-0.3	27	0315	1.2	0.4
W	0856	31.9	9.7	Th	0841	29.1	8.9
	1555	-3.4	-1.0		1526	0.8	0.2
	2131	31.7	9.7		2104	29.9	9.1
13	0419	-1.2	-0.4	28	0351	0.9	0.3
Th	0942	30.6	9.3	F	0917	28.4	8.7
	1632	-1.4	-0.4		1552	1.8	0.5
	2210	31.5	9.6		2130	29.7	9.1
14	0501	-0.8	-0.2	29	0429	0.8	0.2
F	1032	28.8	8.8	Sa	0955	27.3	8.3
	1706	1.2	0.4		1624	3.2	1.0
	2251	30.4	9.3		2158	29.2	8.9
15	0546	0.3	0.1	30	0509	1.0	0.3
Sa	1125	26.5	8.1	Su	1040	26.0	7.9
	1742	4.3	1.3		1700	5.0	1.5
	2336	28.4	8.7		2235	28.4	8.7
				31	0554	1.5	0.5
				M	1133	24.5	7.5
					1745	7.2	2.2
					2320	27.1	8.3

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0645	2.1	0.6	16	0041	22.5	6.9
Tu	1242	23.3	7.1	W	0741	5.0	1.5
	1842	9.4	2.9		1457	23.2	7.1
					2051	12.1	3.7
2	0026	25.7	7.8	17	0216	21.8	6.6
W	0753	2.5	0.8	Th	0908	4.9	1.5
	1427	23.3	7.1		1609	24.8	7.6
	2004	10.5	3.2		2214	9.6	2.9
3	0150	25.3	7.7	18	0345	23.0	7.0
Th	0913	2.0	0.6	F	1028	3.2	1.0
	1600	25.1	7.7		1701	26.4	8.0
	2135	9.2	2.8		2307	6.8	2.1
4	0322	26.5	8.1	19	0441	24.9	7.6
F	1034	0.7	0.2	Sa	1126	1.3	0.4
	1702	27.3	8.3		1738	27.6	8.4
	2254	6.9	2.1		2350	4.6	1.4
5	0434	28.6	8.7	20	0524	26.7	8.1
Sa	1150	-1.3	-0.4	Su	1209	0.0	0.0
	1752	29.0	8.8		1808	28.4	8.7
6	0004	4.2	1.3	21	0029	3.0	0.9
Su	0534	30.5	9.3	M	0601	28.1	8.6
	1245	-2.9	-0.9		1248	-0.4	-0.1
	1837	30.2	9.2		1833	29.1	8.9
7	0101	1.6	0.5	22	0104	1.8	0.5
M	0624	31.9	9.7	Tu	0635	29.2	8.9
	1331	-3.7	-1.1		1326	-0.1	0.0
	1914	31.1	9.5		1901	29.9	9.1
8	0148	-0.4	-0.1	23	0141	0.8	0.2
Tu	0710	32.6	9.9	W	0710	29.8	9.1
	1413	-3.4	-1.0		1358	0.6	0.2
	1946	31.8	9.7		1930	30.6	9.3
9	0233	-1.8	-0.5	24	0217	0.0	0.0
W	0755	32.6	9.9	Th	0747	30.0	9.1
	1452	-2.5	-0.8		1428	1.5	0.5
	2020	32.3	9.8		1959	30.9	9.4
10	0315	-2.3	-0.7	25	0253	-0.5	-0.2
Th	0838	31.9	9.7	F	0824	29.8	9.1
	1527	-0.9	-0.3		1455	2.4	0.7
	2054	32.4	9.9		2024	31.0	9.4
11	0354	-2.1	-0.6	26	0331	-0.7	-0.2
F	0922	30.7	9.4	Sa	0901	29.0	8.8
	1559	1.2	0.4		1524	3.5	1.1
	2128	31.6	9.6		2052	30.6	9.3
12	0432	-1.2	-0.4	27	0408	-0.4	-0.1
Sa	1008	28.9	8.8	Su	0939	27.9	8.5
	1631	3.6	1.1		1558	4.8	1.5
	2203	30.0	9.1		2124	29.9	9.1
13	0511	0.3	0.1	28	0448	0.2	0.1
Su	1056	26.8	8.2	M	1024	26.6	8.1
	1703	6.4	2.0		1637	6.4	2.0
	2239	27.6	8.4		2202	28.6	8.7
14	0550	2.0	0.6	29	0530	1.1	0.3
M	1154	24.7	7.5	Tu	1120	25.2	7.7
	1741	9.2	2.8		1725	8.4	2.6
	2317	24.9	7.6		2253	26.9	8.2
15	0638	3.8	1.2	30	0623	2.1	0.6
Tu	1304	23.3	7.1	W	1234	24.3	7.4
	1839	11.7	3.6		1826	10.1	3.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0005	25.2	7.7	16	0134	21.2	6.5
Th	0732	2.9	0.9	F	0819	5.4	1.6
	1412	24.6	7.5		1501	24.6	7.5
	1959	10.3	3.1		2130	9.2	2.8
2	0143	24.9	7.6	17	0300	22.3	6.8
F	0856	2.5	0.8	Sa	0938	4.2	1.3
	1535	26.4	8.0		1607	26.2	8.0
	2133	7.9	2.4		2225	6.1	1.9
3	0319	26.5	8.1	18	0409	24.3	7.4
Sa	1017	1.1	0.3	Su	1038	2.7	0.8
	1636	28.5	8.7		1649	27.5	8.4
	2252	4.7	1.4		2313	3.6	1.1
4	0428	28.7	8.7	19	0455	26.2	8.0
Su	1129	-0.5	-0.2	M	1129	1.8	0.5
	1726	30.2	9.2		1723	28.6	8.7
	2355	1.7	0.5		2355	1.8	0.5
5	0523	30.5	9.3	20	0535	27.6	8.4
M	1222	-1.4	-0.4	Tu	1212	1.7	0.5
	1808	31.2	9.5		1755	29.5	9.0
6	0047	-0.7	-0.2	21	0035	0.5	0.2
Tu	0614	31.5	9.6	W	0612	28.7	8.7
	1307	-1.4	-0.4		1250	2.1	0.6
	1844	31.8	9.7		1824	30.3	9.2
7	0132	-2.1	-0.6	22	0114	-0.5	-0.2
W	0659	31.9	9.7	Th	0648	29.4	9.0
	1348	-0.5	-0.2		1325	2.8	0.9
	1915	32.2	9.8		1853	31.0	9.4
8	0214	-2.7	-0.8	23	0152	-1.3	-0.4
Th	0742	31.7	9.7	F	0727	29.7	9.1
	1425	0.8	0.2		1356	3.5	1.1
	1946	32.5	9.9		1922	31.4	9.6
9	0253	-2.5	-0.8	24	0233	-1.8	-0.5
F	0824	31.1	9.5	Sa	0808	29.6	9.0
	1458	2.4	0.7		1428	4.2	1.3
	2017	32.2	9.8		1951	31.5	9.6
10	0330	-1.8	-0.5	25	0313	-1.8	-0.5
Sa	0904	30.1	9.2	Su	0848	29.0	8.8
	1527	4.0	1.2		1501	5.0	1.5
	2049	31.1	9.5		2024	31.0	9.4
11	0404	-0.7	-0.2	26	0352	-1.3	-0.4
Su	0946	28.7	8.7	M	0930	28.1	8.6
	1555	5.8	1.8		1539	6.0	1.8
	2120	29.2	8.9		2101	30.0	9.1
12	0439	0.6	0.2	27	0432	-0.5	-0.2
M	1029	27.1	8.3	Tu	1018	27.1	8.3
	1629	7.7	2.3		1624	7.3	2.2
	2152	26.9	8.2		2144	28.5	8.7
13	0514	2.1	0.6	28	0517	0.5	0.2
Tu	1120	25.5	7.8	W	1114	26.2	8.0
	1709	9.7	3.0		1716	8.6	2.6
	2227	24.4	7.4		2243	26.7	8.1
14	0557	3.6	1.1	29	0610	1.7	0.5
W	1221	24.2	7.4	Th	1227	25.8	7.9
	1803	11.4	3.5		1826	9.4	2.9
	2333	22.0	6.7		2359	25.2	7.7
15	0653	5.0	1.5	30	0718	2.5	0.8
Th	1331	23.8	7.3	F	1348	26.4	8.0
	1954	11.9	3.6		2000	8.3	2.5
				31	0138	25.1	7.7
				Sa	0835	2.4	0.7
					1501	27.7	8.4
					2125	5.4	1.6

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0305	26.4	8.0	16	0316	23.2	7.1
Su	0951	1.9	0.6	M	0951	4.8	1.5
	1604	29.3	8.9		1548	27.1	8.3
	2239	2.3	0.7		2228	3.3	1.0
2	0414	28.1	8.6	17	0420	24.8	7.6
M	1059	1.3	0.4	Tu	1044	4.5	1.4
	1654	30.5	9.3		1633	28.0	8.5
	2339	-0.4	-0.1		2316	1.3	0.4
3	0515	29.4	9.0	18	0508	26.3	8.0
Tu	1155	1.2	0.4	W	1131	4.6	1.4
	1737	31.1	9.5		1711	28.9	8.8
4	0030	-2.1	-0.6	19	0002	-0.1	0.0
W	0606	30.1	9.2	Th	0551	27.4	8.4
	1243	1.8	0.5		1211	4.9	1.5
	1812	31.3	9.5		1745	29.7	9.1
5	0114	-2.7	-0.8	20	0045	-1.2	-0.4
Th	0651	30.3	9.2	F	0633	28.3	8.6
	1324	2.9	0.9		1250	5.2	1.6
	1844	31.5	9.6		1817	30.6	9.3
6	0156	-2.6	-0.8	21	0130	-2.1	-0.6
F	0733	30.2	9.2	Sa	0714	28.8	8.8
	1400	4.1	1.2		1328	5.3	1.6
	1913	31.5	9.6		1850	31.2	9.5
7	0233	-1.9	-0.6	22	0213	-2.6	-0.8
Sa	0812	29.8	9.1	Su	0757	28.9	8.8
	1431	5.2	1.6		1407	5.4	1.6
	1945	31.0	9.4		1925	31.3	9.5
8	0307	-1.1	-0.3	23	0256	-2.6	-0.8
Su	0849	29.2	8.9	M	0839	28.8	8.8
	1458	6.1	1.9		1449	5.7	1.7
	2016	29.9	9.1		2007	30.9	9.4
9	0339	-0.2	-0.1	24	0339	-2.3	-0.7
M	0926	28.4	8.7	Tu	0925	28.4	8.7
	1528	7.0	2.1		1534	6.1	1.9
	2048	28.3	8.6		2050	30.0	9.1
10	0411	0.7	0.2	25	0423	-1.7	-0.5
Tu	1006	27.3	8.3	W	1011	28.0	8.5
	1606	8.0	2.4		1623	6.6	2.0
	2123	26.4	8.0		2142	28.7	8.7
11	0446	1.7	0.5	26	0508	-0.8	-0.2
W	1050	26.3	8.0	Th	1106	27.8	8.5
	1648	9.0	2.7		1720	6.9	2.1
	2203	24.4	7.4		2245	27.2	8.3
12	0527	2.8	0.9	27	0559	0.3	0.1
Th	1140	25.5	7.8	F	1207	27.8	8.5
	1738	9.8	3.0		1827	6.7	2.0
	2304	22.5	6.9		2356	25.9	7.9
13	0615	4.0	1.2	28	0659	1.5	0.5
F	1242	25.1	7.7	Sa	1316	28.1	8.6
	1844	10.0	3.0		1947	5.3	1.6
14	0033	21.5	6.6	29	0121	25.4	7.7
Sa	0721	5.1	1.6	Su	0805	2.5	0.8
	1348	25.3	7.7		1423	28.7	8.7
	2030	8.5	2.6		2102	3.1	0.9
15	0200	21.9	6.7	30	0247	25.7	7.8
Su	0845	5.3	1.6	M	0916	3.3	1.0
	1453	26.0	7.9		1524	29.3	8.9
	2136	5.8	1.8		2215	0.8	0.2

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0403	26.7	8.1	16	0332	23.2	7.1
Tu	1028	4.0	1.2	W	0951	7.6	2.3
	1617	29.6	9.0		1538	26.7	8.1
	2318	-1.1	-0.3		2233	1.5	0.5
2	0507	27.7	8.4	17	0442	24.6	7.5
W	1131	4.4	1.3	Th	1044	7.6	2.3
	1705	29.7	9.1		1625	27.6	8.4
					2326	0.0	0.0
3	0011	-2.2	-0.7	18	0535	26.0	7.9
Th	0603	28.4	8.7	F	1132	7.3	2.2
	1222	5.0	1.5		1707	28.6	8.7
	1744	29.6	9.0				
4	0058	-2.4	-0.7	19	0019	-1.2	-0.4
F	0648	28.7	8.7	Sa	0621	27.2	8.3
	1304	5.7	1.7		1219	6.8	2.1
	1819	29.6	9.0		1746	29.7	9.1
5	0140	-2.0	-0.6	20	0109	-2.3	-0.7
Sa	0728	28.7	8.7	Su	0706	28.0	8.5
	1342	6.3	1.9		1305	6.2	1.9
	1851	29.7	9.1		1828	30.6	9.3
6	0217	-1.3	-0.4	21	0157	-3.1	-0.9
Su	0801	28.6	8.7	M	0748	28.6	8.7
	1412	6.7	2.0		1354	5.5	1.7
	1922	29.4	9.0		1914	31.1	9.5
7	0249	-0.6	-0.2	22	0243	-3.6	-1.1
M	0835	28.4	8.7	Tu	0830	28.9	8.8
	1440	6.8	2.1		1443	4.9	1.5
	1957	28.8	8.8		2002	31.1	9.5
8	0320	-0.1	0.0	23	0328	-3.7	-1.1
Tu	0908	28.1	8.6	W	0913	29.1	8.9
	1512	6.8	2.1		1533	4.4	1.3
	2033	27.7	8.4		2051	30.6	9.3
9	0350	0.3	0.1	24	0412	-3.4	-1.0
W	0942	27.7	8.4	Th	0958	29.4	9.0
	1549	6.9	2.1		1624	3.9	1.2
	2109	26.4	8.0		2144	29.8	9.1
10	0424	0.8	0.2	25	0456	-2.6	-0.8
Th	1024	27.2	8.3	F	1044	29.7	9.1
	1631	7.1	2.2		1717	3.5	1.1
	2152	25.1	7.7		2240	28.5	8.7
11	0501	1.5	0.5	26	0541	-1.2	-0.4
F	1104	26.8	8.2	Sa	1136	29.7	9.1
	1717	7.2	2.2		1815	3.1	0.9
	2243	23.9	7.3		2341	27.0	8.2
12	0541	2.7	0.8	27	0631	0.9	0.3
Sa	1153	26.4	8.0	Su	1236	29.4	9.0
	1808	7.1	2.2		1919	2.5	0.8
	2341	22.8	6.9				
13	0627	4.2	1.3	28	0055	25.5	7.8
Su	1250	26.1	8.0	M	0729	3.3	1.0
	1911	6.6	2.0		1337	28.9	8.8
					2027	1.8	0.5
14	0054	22.2	6.8	29	0223	24.7	7.5
M	0723	5.9	1.8	Tu	0837	5.5	1.7
	1350	26.0	7.9		1439	28.3	8.6
	2030	5.3	1.6		2145	0.9	0.3
15	0210	22.3	6.8	30	0351	25.1	7.7
Tu	0842	7.3	2.2	W	0954	7.0	2.1
	1447	26.2	8.0		1540	27.7	8.4
	2137	3.3	1.0		2257	-0.3	-0.1
				31	0502	26.2	8.0
				Th	1108	7.3	2.2
					1636	27.4	8.4
					2353	-1.2	-0.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0301	7.4	2.3	16	0312	6.8	2.1
Th	0808	2.0	0.6	F	0819	2.5	0.8
	1418	10.7	3.3		1423	9.1	2.8
	2115	-2.9	-0.9		2112	-1.2	-0.4
2	0344	7.6	2.3	17	0341	7.0	2.1
F	0902	1.8	0.5	Sa	0857	2.4	0.7
	1509	10.3	3.1		1458	8.8	2.7
	2159	-2.4	-0.7		2141	-1.0	-0.3
3	0431	7.8	2.4	18	0411	7.2	2.2
Sa	0955	1.7	0.5	Su	0934	2.2	0.7
	1559	9.5	2.9		1530	8.4	2.6
	2242	-1.7	-0.5		2211	-0.7	-0.2
4	0514	7.9	2.4	19	0439	7.4	2.3
Su	1052	1.8	0.5	M	1015	2.1	0.6
	1650	8.5	2.6		1607	7.9	2.4
	2325	-0.7	-0.2		2239	-0.2	-0.1
5	0602	8.0	2.4	20	0508	7.5	2.3
M	1154	1.8	0.5	Tu	1058	2.0	0.6
	1747	7.3	2.2		1648	7.1	2.2
					2309	0.5	0.2
6	0006	0.3	0.1	21	0540	7.7	2.3
Tu	0647	8.0	2.4	W	1154	1.8	0.5
	1303	1.8	0.5		1738	6.3	1.9
	1854	6.2	1.9		2343	1.2	0.4
7	0049	1.3	0.4	22	0619	7.9	2.4
W	0737	8.0	2.4	Th	1255	1.6	0.5
	1419	1.7	0.5		1844	5.5	1.7
	2014	5.3	1.6				
8	0140	2.2	0.7	23	0024	2.0	0.6
Th	0831	7.9	2.4	F	0708	8.1	2.5
	1535	1.3	0.4		1412	1.3	0.4
	2145	5.0	1.5		2017	4.9	1.5
9	0236	2.9	0.9	24	0116	2.7	0.8
F	0924	8.0	2.4	Sa	0810	8.3	2.5
	1647	0.8	0.2		1535	0.6	0.2
	2307	5.0	1.5		2204	4.8	1.5
10	0340	3.4	1.0	25	0232	3.2	1.0
Sa	1019	8.1	2.5	Su	0918	8.6	2.6
	1739	0.3	0.1		1651	-0.3	-0.1
					2331	5.3	1.6
11	0016	5.4	1.6	26	0356	3.4	1.0
Su	0444	3.5	1.1	M	1031	9.2	2.8
	1108	8.3	2.5		1752	-1.2	-0.4
	1824	-0.2	-0.1				
12	0101	5.7	1.7	27	0032	6.0	1.8
M	0536	3.4	1.0	Tu	0514	3.1	0.9
	1155	8.6	2.6		1136	9.8	3.0
	1904	-0.6	-0.2		1845	-2.0	-0.6
13	0138	6.1	1.9	28	0118	6.7	2.0
Tu	0624	3.2	1.0	W	0616	2.5	0.8
	1237	8.9	2.7		1232	10.3	3.1
	1938	-1.0	-0.3		1933	-2.5	-0.8
14	0211	6.3	1.9	29	0200	7.3	2.2
W	0704	3.0	0.9	Th	0712	1.8	0.5
	1314	9.1	2.8		1325	10.6	3.2
	2013	-1.2	-0.4		2015	-2.7	-0.8
15	0242	6.6	2.0	30	0241	7.9	2.4
Th	0743	2.7	0.8	F	0805	1.3	0.4
	1351	9.2	2.8		1413	10.5	3.2
	2042	-1.3	-0.4		2056	-2.5	-0.8
				31	0320	8.3	2.5
				Sa	0855	0.9	0.3
					1502	10.0	3.0
					2134	-2.0	-0.6

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0356	8.6	2.6	16	0328	8.0	2.4
Su	0944	0.7	0.2	M	0918	1.0	0.3
	1547	9.2	2.8		1518	8.4	2.6
	2210	-1.2	-0.4		2134	-0.3	-0.1
2	0434	8.7	2.7	17	0355	8.3	2.5
M	1033	0.7	0.2	Tu	0955	0.8	0.2
	1633	8.2	2.5		1555	7.8	2.4
	2245	-0.2	-0.1		2202	0.2	0.1
3	0512	8.6	2.6	18	0423	8.4	2.6
Tu	1125	0.9	0.3	W	1037	0.7	0.2
	1725	7.0	2.1		1637	7.1	2.2
	2320	0.8	0.2		2232	0.9	0.3
4	0551	8.4	2.6	19	0455	8.5	2.6
W	1220	1.1	0.3	Th	1125	0.7	0.2
	1818	5.9	1.8		1725	6.2	1.9
	2353	1.8	0.5		2304	1.7	0.5
5	0634	8.0	2.4	20	0533	8.5	2.6
Th	1327	1.4	0.4	F	1226	0.8	0.2
	1929	5.0	1.5		1830	5.3	1.6
					2343	2.5	0.8
6	0034	2.7	0.8	21	0623	8.3	2.5
F	0724	7.7	2.3	Sa	1342	0.8	0.2
	1445	1.5	0.5		2007	4.7	1.4
	2111	4.5	1.4				
7	0126	3.5	1.1	22	0039	3.2	1.0
Sa	0827	7.5	2.3	Su	0733	8.2	2.5
	1609	1.2	0.4		1513	0.5	0.2
	2259	4.7	1.4		2206	4.8	1.5
8	0244	3.9	1.2	23	0210	3.7	1.1
Su	0939	7.5	2.3	M	0859	8.3	2.5
	1718	0.8	0.2		1638	-0.1	0.0
					2323	5.4	1.6
9	0004	5.1	1.6	24	0353	3.5	1.1
M	0415	3.9	1.2	Tu	1022	8.7	2.7
	1044	7.7	2.3		1740	-0.8	-0.2
	1808	0.2	0.1				
10	0045	5.6	1.7	25	0016	6.3	1.9
Tu	0524	3.6	1.1	W	0516	2.9	0.9
	1136	8.1	2.5		1131	9.3	2.8
	1845	-0.2	-0.1		1829	-1.5	-0.5
11	0117	6.1	1.9	26	0059	7.1	2.2
W	0613	3.1	0.9	Th	0617	2.0	0.6
	1222	8.5	2.6		1227	9.8	3.0
	1918	-0.7	-0.2		1913	-1.8	-0.5
12	0146	6.6	2.0	27	0134	7.9	2.4
Th	0654	2.6	0.8	F	0709	1.1	0.3
	1301	8.9	2.7		1319	10.0	3.0
	1949	-0.9	-0.3		1951	-1.8	-0.5
13	0211	7.0	2.1	28	0211	8.5	2.6
F	0732	2.1	0.6	Sa	0756	0.3	0.1
	1336	9.0	2.7		1405	9.8	3.0
	2015	-1.1	-0.3		2027	-1.6	-0.5
14	0237	7.4	2.3				
Sa	0808	1.7	0.5				
	1411	9.0	2.7				
	2043	-1.0	-0.3				
15	0305	7.7	2.3				
Su	0841	1.3	0.4				
	1443	8.8	2.7				
	2109	-0.8	-0.2				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0245	9.0	2.7	16	0219	8.5	2.6
Su	0840	-0.2	-0.1	M	0821	0.1	0.0
	1450	9.4	2.9		1430	8.5	2.6
	2103	-1.0	-0.3		2033	0.0	0.0
2	0319	9.2	2.8	17	0246	8.9	2.7
M	0925	-0.4	-0.1	Tu	0859	-0.3	-0.1
	1532	8.7	2.7		1508	8.1	2.5
	2135	-0.3	-0.1		2102	0.4	0.1
3	0352	9.2	2.8	18	0313	9.1	2.8
Tu	1008	-0.3	-0.1	W	0939	-0.5	-0.2
	1616	7.7	2.3		1547	7.5	2.3
	2207	0.6	0.2		2131	1.0	0.3
4	0424	8.9	2.7	19	0344	9.2	2.8
W	1053	0.0	0.0	Th	1021	-0.5	-0.2
	1701	6.8	2.1		1632	6.8	2.1
	2234	1.5	0.5		2202	1.6	0.5
5	0458	8.5	2.6	20	0419	9.1	2.8
Th	1141	0.5	0.2	F	1109	-0.3	-0.1
	1751	5.8	1.8		1726	6.0	1.8
	2306	2.4	0.7		2240	2.3	0.7
6	0535	8.0	2.4	21	0501	8.8	2.7
F	1234	1.1	0.3	Sa	1212	0.1	0.0
	1855	5.0	1.5		1836	5.3	1.6
	2341	3.2	1.0		2327	3.0	0.9
7	0618	7.5	2.3	22	0557	8.4	2.6
Sa	1350	1.5	0.5	Su	1327	0.4	0.1
	2033	4.5	1.4		2015	5.0	1.5
8	0028	3.8	1.2	23	0034	3.6	1.1
Su	0727	7.0	2.1	M	0715	7.9	2.4
	1522	1.5	0.5		1456	0.4	0.1
	2235	4.7	1.4		2157	5.3	1.6
9	0203	4.2	1.3	24	0225	3.8	1.2
M	0856	6.9	2.1	Tu	0854	7.8	2.4
	1639	1.2	0.4		1616	0.0	0.0
	2335	5.2	1.6		2302	6.0	1.8
10	0356	4.0	1.2	25	0406	3.2	1.0
Tu	1015	7.2	2.2	W	1020	8.1	2.5
	1734	0.7	0.2		1716	-0.4	-0.1
					2348	6.9	2.1
11	0011	5.7	1.7	26	0516	2.2	0.7
W	0507	3.5	1.1	Th	1126	8.6	2.6
	1115	7.6	2.3		1803	-0.7	-0.2
	1811	0.3	0.1				
12	0039	6.3	1.9	27	0027	7.8	2.4
Th	0555	2.8	0.9	F	0613	1.1	0.3
	1200	8.1	2.5		1221	8.9	2.7
	1843	-0.1	0.0		1845	-0.7	-0.2
13	0106	6.9	2.1	28	0102	8.5	2.6
F	0637	2.0	0.6	Sa	0700	0.2	0.1
	1240	8.4	2.6		1310	9.0	2.7
	1911	-0.4	-0.1		1920	-0.6	-0.2
14	0131	7.5	2.3	29	0134	9.1	2.8
Sa	0712	1.3	0.4	Su	0745	-0.6	-0.2
	1317	8.6	2.6		1354	8.8	2.7
	1938	-0.4	-0.1		1954	-0.2	-0.1
15	0154	8.1	2.5	30	0208	9.4	2.9
Su	0746	0.7	0.2	M	0825	-1.0	-0.3
	1353	8.6	2.6		1437	8.5	2.6
	2005	-0.3	-0.1		2028	0.3	0.1
				31	0239	9.5	2.9
				Tu	0903	-1.1	-0.3
					1517	7.9	2.4
					2058	0.9	0.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0310	9.4	2.9	16	0238	9.7	3.0
W	0942	-0.9	-0.3	Th	0923	-1.6	-0.5
	1559	7.2	2.2		1544	7.2	2.2
	2130	1.6	0.5		2105	1.8	0.5
2	0339	9.0	2.7	17	0315	9.7	3.0
Th	1021	-0.5	-0.2	F	1009	-1.5	-0.5
	1642	6.5	2.0		1634	6.6	2.0
	2159	2.3	0.7		2144	2.3	0.7
3	0411	8.5	2.6	18	0357	9.4	2.9
F	1106	0.0	0.0	Sa	1101	-1.1	-0.3
	1731	5.8	1.8		1733	6.1	1.9
	2231	2.9	0.9		2232	2.9	0.9
4	0447	8.0	2.4	19	0448	8.9	2.7
Sa	1157	0.7	0.2	Su	1202	-0.5	-0.2
	1831	5.2	1.6		1846	5.7	1.7
	2309	3.5	1.1		2331	3.4	1.0
5	0533	7.4	2.3	20	0550	8.2	2.5
Su	1300	1.2	0.4	M	1314	-0.1	0.0
	1957	4.8	1.5		2011	5.7	1.7
6	0002	4.0	1.2	21	0057	3.6	1.1
M	0634	6.8	2.1	Tu	0713	7.6	2.3
	1419	1.5	0.5		1432	0.2	0.1
	2136	5.0	1.5		2128	6.2	1.9
7	0142	4.2	1.3	22	0240	3.4	1.0
Tu	0803	6.5	2.0	W	0846	7.4	2.3
	1537	1.4	0.4		1542	0.3	0.1
	2239	5.5	1.7		2225	6.9	2.1
8	0327	3.9	1.2	23	0407	2.5	0.8
W	0933	6.6	2.0	Th	1009	7.4	2.3
	1633	1.1	0.3		1638	0.3	0.1
	2315	6.1	1.9		2310	7.7	2.3
9	0438	3.2	1.0	24	0511	1.4	0.4
Th	1039	7.0	2.1	F	1115	7.6	2.3
	1715	0.8	0.2		1726	0.4	0.1
	2347	6.7	2.0		2347	8.4	2.6
10	0528	2.3	0.7	25	0603	0.4	0.1
F	1131	7.3	2.2	Sa	1211	7.7	2.3
	1752	0.6	0.2		1808	0.6	0.2
11	0013	7.4	2.3	26	0024	9.0	2.7
Sa	0609	1.4	0.4	Su	0648	-0.5	-0.2
	1213	7.7	2.3		1259	7.8	2.4
	1824	0.5	0.2		1843	0.8	0.2
12	0040	8.1	2.5	27	0058	9.4	2.9
Su	0648	0.5	0.2	M	0729	-1.1	-0.3
	1256	7.9	2.4		1345	7.7	2.3
	1854	0.5	0.2		1920	1.2	0.4
13	0107	8.7	2.7	28	0130	9.6	2.9
M	0724	-0.4	-0.1	Tu	0806	-1.4	-0.4
	1338	8.0	2.4		1427	7.5	2.3
	1925	0.7	0.2		1954	1.6	0.5
14	0137	9.2	2.8	29	0201	9.5	2.9
Tu	0802	-1.0	-0.3	W	0843	-1.4	-0.4
	1419	7.9	2.4		1507	7.2	2.2
	1957	1.0	0.3		2026	2.0	0.6
15	0206	9.6	2.9	30	0233	9.3	2.8
W	0841	-1.5	-0.5	Th	0923	-1.2	-0.4
	1501	7.6	2.3		1549	6.8	2.1
	2029	1.4	0.4		2058	2.5	0.8

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0305	9.0	2.7	16	0259	10.1	3.1
F	1000	-0.8	-0.2	Sa	1003	-2.1	-0.6
	1631	6.3	1.9		1637	6.7	2.0
	2133	2.9	0.9		2138	2.7	0.8
2	0339	8.5	2.6	17	0347	9.6	2.9
Sa	1040	-0.3	-0.1	Su	1055	-1.6	-0.5
	1717	5.9	1.8		1735	6.5	2.0
	2208	3.3	1.0		2234	3.0	0.9
3	0416	8.0	2.4	18	0442	9.0	2.7
Su	1127	0.2	0.1	M	1151	-1.0	-0.3
	1812	5.5	1.7		1840	6.5	2.0
	2253	3.7	1.1		2345	3.2	1.0
4	0501	7.4	2.3	19	0549	8.1	2.5
M	1220	0.7	0.2	Tu	1254	-0.4	-0.1
	1918	5.4	1.6		1943	6.7	2.0
	2353	4.0	1.2				
5	0557	6.9	2.1	20	0111	3.1	0.9
Tu	1320	1.1	0.3	W	0707	7.4	2.3
	2027	5.5	1.7		1357	0.2	0.1
					2045	7.1	2.2
6	0116	4.0	1.2	21	0236	2.6	0.8
W	0711	6.4	2.0	Th	0833	6.8	2.1
	1421	1.3	0.4		1457	0.7	0.2
	2124	6.0	1.8		2140	7.7	2.3
7	0245	3.6	1.1	22	0356	1.8	0.5
Th	0837	6.2	1.9	F	0953	6.5	2.0
	1516	1.4	0.4		1551	1.1	0.3
	2206	6.5	2.0		2225	8.3	2.5
8	0359	2.9	0.9	23	0457	0.8	0.2
F	0950	6.3	1.9	Sa	1103	6.5	2.0
	1606	1.4	0.4		1641	1.5	0.5
	2241	7.2	2.2		2307	8.8	2.7
9	0452	1.9	0.6	24	0550	0.0	0.0
Sa	1052	6.5	2.0	Su	1200	6.6	2.0
	1649	1.4	0.4		1726	1.8	0.5
	2315	7.9	2.4		2346	9.1	2.8
10	0537	0.8	0.2	25	0635	-0.7	-0.2
Su	1147	6.8	2.1	M	1252	6.7	2.0
	1727	1.5	0.5		1808	2.1	0.6
	2347	8.6	2.6				
11	0619	-0.2	-0.1	26	0022	9.3	2.8
M	1233	7.0	2.1	Tu	0714	-1.2	-0.4
	1808	1.6	0.5		1339	6.7	2.0
					1846	2.4	0.7
12	0019	9.2	2.8	27	0057	9.4	2.9
Tu	0701	-1.1	-0.3	W	0754	-1.4	-0.4
	1323	7.2	2.2		1420	6.7	2.0
	1846	1.7	0.5		1925	2.6	0.8
13	0056	9.8	3.0	28	0133	9.4	2.9
W	0744	-1.8	-0.5	Th	0829	-1.4	-0.4
	1409	7.3	2.2		1459	6.6	2.0
	1922	1.9	0.6		2000	2.8	0.9
14	0135	10.1	3.1	29	0208	9.2	2.8
Th	0826	-2.2	-0.7	F	0907	-1.3	-0.4
	1455	7.2	2.2		1540	6.5	2.0
	2005	2.1	0.6		2036	3.0	0.9
15	0214	10.2	3.1	30	0241	8.9	2.7
F	0913	-2.3	-0.7	Sa	0942	-1.0	-0.3
	1544	7.0	2.1		1619	6.3	1.9
	2049	2.4	0.7		2115	3.2	1.0
				31	0318	8.6	2.6
				Su	1021	-0.6	-0.2
					1701	6.1	1.9
					2154	3.3	1.0

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0355	8.1	2.5	16	0440	9.0	2.7
M	1100	-0.2	-0.1	Tu	1133	-1.3	-0.4
	1746	6.1	1.9		1812	7.4	2.3
	2240	3.5	1.1		2345	2.4	0.7
2	0437	7.6	2.3	17	0541	8.0	2.4
Tu	1142	0.2	0.1	W	1223	-0.4	-0.1
	1834	6.1	1.9		1904	7.6	2.3
	2337	3.6	1.1				
3	0526	7.0	2.1	18	0059	2.2	0.7
W	1225	0.6	0.2	Th	0649	7.0	2.1
	1921	6.3	1.9		1312	0.4	0.1
					1959	7.9	2.4
4	0042	3.5	1.1	19	0215	1.8	0.5
Th	0625	6.4	2.0	F	0809	6.2	1.9
	1311	1.1	0.3		1406	1.3	0.4
	2006	6.6	2.0		2050	8.2	2.5
5	0157	3.1	0.9	20	0330	1.3	0.4
F	0737	5.9	1.8	Sa	0932	5.7	1.7
	1400	1.5	0.5		1459	2.0	0.6
	2051	7.1	2.2		2143	8.5	2.6
6	0307	2.4	0.7	21	0437	0.6	0.2
Sa	0857	5.7	1.7	Su	1049	5.6	1.7
	1449	1.8	0.5		1554	2.5	0.8
	2133	7.6	2.3		2228	8.7	2.7
7	0409	1.5	0.5	22	0534	0.0	0.0
Su	1014	5.7	1.7	M	1153	5.7	1.7
	1541	2.1	0.6		1646	2.9	0.9
	2214	8.3	2.5		2315	8.9	2.7
8	0505	0.4	0.1	23	0621	-0.5	-0.2
M	1120	5.9	1.8	Tu	1249	5.9	1.8
	1633	2.3	0.7		1739	3.0	0.9
	2257	8.9	2.7		2355	9.0	2.7
9	0554	-0.6	-0.2	24	0703	-0.9	-0.3
Tu	1216	6.3	1.9	W	1335	6.1	1.9
	1720	2.4	0.7		1824	3.1	0.9
	2342	9.6	2.9				
10	0643	-1.5	-0.5	25	0037	9.1	2.8
W	1312	6.6	2.0	Th	0741	-1.1	-0.3
	1811	2.4	0.7		1414	6.3	1.9
					1906	3.1	0.9
11	0027	10.1	3.1	26	0115	9.1	2.8
Th	0730	-2.2	-0.7	F	0817	-1.2	-0.4
	1401	6.8	2.1		1449	6.4	2.0
	1859	2.4	0.7		1943	3.0	0.9
12	0113	10.4	3.2	27	0151	9.1	2.8
F	0817	-2.6	-0.8	Sa	0852	-1.2	-0.4
	1449	7.0	2.1		1525	6.5	2.0
	1949	2.4	0.7		2022	3.0	0.9
13	0200	10.5	3.2	28	0229	8.9	2.7
Sa	0906	-2.7	-0.8	Su	0925	-1.1	-0.3
	1541	7.1	2.2		1600	6.6	2.0
	2042	2.4	0.7		2101	2.9	0.9
14	0253	10.3	3.1	29	0304	8.7	2.7
Su	0954	-2.5	-0.8	M	1000	-0.9	-0.3
	1627	7.2	2.2		1635	6.6	2.0
	2138	2.4	0.7		2144	2.9	0.9
15	0345	9.8	3.0	30	0336	8.3	2.5
M	1042	-2.0	-0.6	Tu	1032	-0.5	-0.2
	1719	7.3	2.2		1709	6.7	2.0
	2237	2.4	0.7		2226	2.9	0.9

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height	
	h m	ft	m
1	0416	7.7	2.3
W	1104	-0.1	0.0
	1743	6.8	2.1
	2312	2.9	0.9
2	0458	7.1	2.2
Th	1136	0.4	0.1
	1818	7.0	2.1
3	0007	2.7	0.8
F	0549	6.4	2.0
	1212	1.0	0.3
	1856	7.3	2.2
4	0109	2.4	0.7
Sa	0651	5.7	1.7
	1252	1.6	0.5
	1940	7.6	2.3
5	0218	1.9	0.6
Su	0809	5.2	1.6
	1340	2.2	0.7
	2028	8.0	2.4
6	0329	1.1	0.3
M	0938	5.1	1.6
	1438	2.7	0.8
	2122	8.5	2.6
7	0436	0.2	0.1
Tu	1102	5.3	1.6
	1545	3.0	0.9
	2217	9.0	2.7
8	0534	-0.7	-0.2
W	1208	5.7	1.7
	1649	3.0	0.9
	2315	9.6	2.9
9	0627	-1.6	-0.5
Th	1302	6.2	1.9
	1750	2.8	0.9
10	0011	10.2	3.1
F	0719	-2.3	-0.7
	1352	6.7	2.0
	1848	2.4	0.7
11	0104	10.6	3.2
Sa	0805	-2.7	-0.8
	1437	7.2	2.2
	1943	2.1	0.6
12	0155	10.7	3.3
Su	0851	-2.8	-0.9
	1523	7.5	2.3
	2039	1.7	0.5
13	0247	10.4	3.2
M	0937	-2.5	-0.8
	1605	7.9	2.4
	2131	1.5	0.5
14	0337	9.8	3.0
Tu	1019	-1.9	-0.6
	1648	8.1	2.5
	2228	1.4	0.4
15	0429	8.9	2.7
W	1101	-1.0	-0.3
	1733	8.3	2.5
	2327	1.4	0.4

Day	Time	Height	
	h m	ft	m
16	0527	7.7	2.3
Th	1143	0.0	0.0
	1818	8.3	2.5
17	0033	1.3	0.4
F	0627	6.6	2.0
	1225	1.0	0.3
	1906	8.3	2.5
18	0143	1.3	0.4
Sa	0740	5.6	1.7
	1310	2.0	0.6
	1958	8.2	2.5
19	0258	1.1	0.3
Su	0911	5.1	1.6
	1406	2.8	0.9
	2055	8.2	2.5
20	0414	0.7	0.2
M	1039	5.0	1.5
	1509	3.3	1.0
	2151	8.2	2.5
21	0516	0.3	0.1
Tu	1149	5.3	1.6
	1618	3.6	1.1
	2247	8.3	2.5
22	0608	-0.2	-0.1
W	1245	5.6	1.7
	1720	3.5	1.1
	2336	8.5	2.6
23	0650	-0.5	-0.2
Th	1323	6.0	1.8
	1809	3.3	1.0
24	0021	8.7	2.7
F	0725	-0.8	-0.2
	1359	6.3	1.9
	1854	3.0	0.9
25	0101	8.9	2.7
Sa	0800	-1.0	-0.3
	1429	6.6	2.0
	1933	2.7	0.8
26	0139	9.0	2.7
Su	0830	-1.1	-0.3
	1459	6.8	2.1
	2009	2.5	0.8
27	0214	9.0	2.7
M	0901	-1.1	-0.3
	1528	7.1	2.2
	2047	2.3	0.7
28	0249	8.7	2.7
Tu	0928	-0.9	-0.3
	1556	7.3	2.2
	2123	2.1	0.6
29	0321	8.3	2.5
W	0954	-0.5	-0.2
	1624	7.4	2.3
	2203	2.0	0.6
30	0356	7.8	2.4
Th	1024	0.0	0.0
	1650	7.6	2.3
	2245	1.8	0.5
31	0437	7.1	2.2
F	1050	0.6	0.2
	1719	7.7	2.3
	2333	1.7	0.5

AUGUST

Day	Time	Height	
	h m	ft	m
1	0519	6.4	2.0
Sa	1122	1.2	0.4
	1754	7.9	2.4
2	0030	1.6	0.5
Su	0619	5.6	1.7
	1157	1.9	0.6
	1836	8.0	2.4
3	0138	1.4	0.4
M	0736	4.9	1.5
	1244	2.6	0.8
	1932	8.1	2.5
4	0255	0.9	0.3
Tu	0921	4.7	1.4
	1349	3.2	1.0
	2041	8.4	2.6
5	0414	0.2	0.1
W	1057	5.0	1.5
	1515	3.4	1.0
	2154	8.8	2.7
6	0520	-0.7	-0.2
Th	1159	5.7	1.7
	1635	3.2	1.0
	2303	9.4	2.9
7	0616	-1.5	-0.5
F	1250	6.4	2.0
	1745	2.6	0.8
8	0003	10.0	3.0
Sa	0704	-2.1	-0.6
	1333	7.1	2.2
	1845	1.9	0.6
9	0058	10.4	3.2
Su	0749	-2.4	-0.7
	1412	7.7	2.3
	1938	1.2	0.4
10	0150	10.5	3.2
M	0831	-2.3	-0.7
	1454	8.3	2.5
	2029	0.7	0.2
11	0239	10.1	3.1
Tu	0910	-1.9	-0.6
	1531	8.7	2.7
	2118	0.3	0.1
12	0326	9.4	2.9
W	0947	-1.2	-0.4
	1608	8.9	2.7
	2210	0.2	0.1
13	0416	8.5	2.6
Th	1024	-0.3	-0.1
	1648	8.9	2.7
	2302	0.3	0.1
14	0506	7.3	2.2
F	1101	0.7	0.2
	1728	8.7	2.7
	2357	0.6	0.2
15	0604	6.2	1.9
Sa	1138	1.7	0.5
	1810	8.3	2.5

Day	Time	Height	
	h m	ft	m
16	0103	0.9	0.3
Su	0711	5.3	1.6
	1218	2.7	0.8
	1903	7.9	2.4
17	0219	1.1	0.3
M	0848	4.8	1.5
	1313	3.4	1.0
	2006	7.6	2.3
18	0345	1.1	0.3
Tu	1030	4.8	1.5
	1433	3.9	1.2
	2120	7.5	2.3
19	0454	0.7	0.2
W	1144	5.2	1.6
	1605	3.9	1.2
	2228	7.7	2.3
20	0547	0.3	0.1
Th	1226	5.7	1.7
	1710	3.6	1.1
	2323	8.0	2.4
21	0627	-0.1	0.0
F	1258	6.1	1.9
	1800	3.1	0.9
22	0009	8.4	2.6
Sa	0702	-0.5	-0.2
	1329	6.6	2.0
	1840	2.5	0.8
23	0048	8.7	2.7
Su	0731	-0.7	-0.2
	1354	7.0	2.1
	1919	2.0	0.6
24	0123	8.8	2.7
M	0759	-0.8	-0.2
	1420	7.4	2.3
	1952	1.6	0.5
25	0158	8.8	2.7
Tu	0827	-0.7	-0.2
	1445	7.8	2.4
	2027	1.2	0.4
26	0230	8.6	2.6
W	0852	-0.5	-0.2
	1509	8.0	2.4
	2102	0.9	0.3
27	0305	8.2	2.5
Th	0917	0.0	0.0
	1534	8.2	2.5
	2138	0.7	0.2
28	0341	7.6	2.3
F	0943	0.5	0.2
	1559	8.3	2.5
	2216	0.6	0.2
29	0419	7.0	2.1
Sa	1011	1.1	0.3
	1631	8.4	2.6
	2301	0.6	0.2
30	0503	6.2	1.9
Su	1040	1.8	0.5
	1703	8.3	2.5
	2354	0.8	0.2
31	0602	5.4	1.6
M	1117	2.5	0.8
	1749	8.2	2.5

SEPTEMBER

Day	Time	Height	
	h m	ft	m
1	0105	0.8	0.2
Tu	0727	4.8	1.5
	1207	3.2	1.0
	1855	8.1	2.5
2	0235	0.7	0.2
W	0922	4.7	1.4
	1327	3.6	1.1
	2019	8.1	2.5
3	0358	0.2	0.1
Th	1049	5.3	1.6
	1514	3.6	1.1
	2145	8.4	2.6
4	0506	-0.5	-0.2
F	1143	6.1	1.9
	1643	3.0	0.9
	2258	9.0	2.7
5	0558	-1.1	-0.3
Sa	1226	6.9	2.1
	1746	2.0	0.6
6	0000	9.6	2.9
Su	0643	-1.5	-0.5
	1304	7.8	2.4
	1841	1.0	0.3
7	0052	9.9	3.0
M	0722	-1.6	-0.5
	1341	8.5	2.6
	1928	0.1	0.0
8	0141	9.8	3.0
Tu	0800	-1.4	-0.4
	1417	9.1	2.8
	2017	-0.5	-0.2
9	0227	9.4	2.9
W	0835	-0.9	-0.3
	1453	9.4	2.9
	2102	-0.8	-0.2
10	0313	8.8	2.7
Th	0911	-0.2	-0.1
	1525	9.5	2.9
	2147	-0.8	-0.2
11	0359	7.9	2.4
F	0946	0.7	0.2
	1603	9.2	2.8
	2233	-0.5	-0.2
12	0445	7.0	2.1
Sa	1018	1.6	0.5
	1639	8.8	2.7
	2322	0.1	0.0
13	0540	6.0	1.8
Su	1053	2.5	0.8
	1717	8.2	2.5
14	0018	0.7	0.2
M	0646	5.2	1.6
	1132	3.2	1.0
	1807	7.6	2.3
15	0133	1.2	0.4
Tu	0823	4.8	1.5
	1231	3.9	1.2
	1915	7.1	2.2

Day	Time	Height	
	h m	ft	m
16	0301	1.3	0.4
W	1009	5.0	1.5
	1410	4.2	1.3
	2043	6.9	2.1
17	0420	1.1	0.3
Th	1115	5.4	1.6
	1551	3.9	1.2
	2203	7.1	2.2
18	0511	0.7	0.2
F	1150	5.9	1.8
	1658	3.3	1.0
	2301	7.5	2.3
19	0554	0.4	0.1
Sa	1219	6.5	2.0
	1744	2.6	0.8
	2347	7.9	2.4
20	0623	0.1	0.0
Su	1245	7.1	2.2
	1822	1.9	0.6
21	0027	8.2	2.5
M	0651	-0.1	0.0
	1309	7.6	2.3
	1858	1.2	0.4
22	0104	8.3	2.5
Tu	0720	-0.1	0.0
	1334	8.1	2.5
	1933	0.6	0.2
23	0139	8.3	2.5
W	0745	0.0	0.0
	1359	8.5	2.6
	2005	0.0	0.0
24	0215	8.2	2.5
Th	0813	0.3	0.1
	1424	8.8	2.7
	2040	-0.3	-0.1
25	0251	7.8	2.4
F	0839	0.7	0.2
	1449	9.0	2.7
	2115	-0.5	-0.2
26	0328	7.4	2.3
Sa	0907	1.3	0.4
	1517	9.0	2.7
	2157	-0.5	-0.2
27	0410	6.7	2.0
Su	0939	1.8	0.5
	1549	8.9	2.7
	2242	-0.3	-0.1
28	0458	6.0	1.8
M	1011	2.5	0.8
	1629	8.7	2.7
	2338	0.0	0.0
29	0604	5.4	1.6
Tu	1053	3.1	0.9
	1722	8.3	2.5
30	0048	0.4	0.1
W	0737	5.0	1.5
	1159	3.6	1.1
	1834	7.9	2.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

KODIAK, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0215	0.5	0.2	16	0319	1.3	0.4
Th	0917	5.3	1.6	F	1022	5.7	1.7
	1341	3.8	1.2		1524	3.8	1.2
	2011	7.7	2.3		2123	6.5	2.0
2	0335	0.2	0.1	17	0413	1.2	0.4
F	1029	5.9	1.8	Sa	1059	6.3	1.9
	1529	3.3	1.0		1631	3.1	0.9
	2140	7.9	2.4		2229	6.8	2.1
3	0440	-0.2	-0.1	18	0458	1.0	0.3
Sa	1118	6.8	2.1	Su	1128	6.9	2.1
	1646	2.3	0.7		1720	2.2	0.7
	2254	8.3	2.5		2318	7.1	2.2
4	0528	-0.5	-0.2	19	0531	0.8	0.2
Su	1156	7.7	2.3	M	1155	7.6	2.3
	1745	1.1	0.3		1758	1.3	0.4
	2352	8.7	2.7				
5	0614	-0.6	-0.2	20	0003	7.4	2.3
M	1232	8.6	2.6	Tu	0603	0.8	0.2
	1833	0.0	0.0		1220	8.2	2.5
					1835	0.4	0.1
6	0045	8.9	2.7	21	0040	7.6	2.3
Tu	0653	-0.5	-0.2	W	0632	0.8	0.2
	1306	9.3	2.8		1248	8.7	2.7
	1919	-0.8	-0.2		1907	-0.3	-0.1
7	0131	8.8	2.7	22	0120	7.7	2.3
W	0728	-0.1	0.0	Th	0704	1.0	0.3
	1339	9.7	3.0		1314	9.2	2.8
	2001	-1.4	-0.4		1943	-1.0	-0.3
8	0216	8.5	2.6	23	0200	7.6	2.3
Th	0803	0.4	0.1	F	0734	1.2	0.4
	1414	9.9	3.0		1342	9.5	2.9
	2043	-1.6	-0.5		2021	-1.4	-0.4
9	0302	8.0	2.4	24	0241	7.4	2.3
F	0838	1.0	0.3	Sa	0806	1.6	0.5
	1447	9.7	3.0		1414	9.7	3.0
	2125	-1.4	-0.4		2100	-1.5	-0.5
10	0344	7.3	2.2	25	0323	7.0	2.1
Sa	0910	1.7	0.5	Su	0841	2.0	0.6
	1520	9.3	2.8		1450	9.6	2.9
	2207	-1.0	-0.3		2142	-1.4	-0.4
11	0429	6.6	2.0	26	0408	6.6	2.0
Su	0942	2.4	0.7	M	0917	2.4	0.7
	1554	8.8	2.7		1528	9.4	2.9
	2250	-0.3	-0.1		2231	-1.1	-0.3
12	0521	5.9	1.8	27	0503	6.1	1.9
M	1018	3.0	0.9	Tu	0959	2.9	0.9
	1633	8.1	2.5		1614	8.9	2.7
	2342	0.4	0.1		2330	-0.6	-0.2
13	0624	5.3	1.6	28	0609	5.7	1.7
Tu	1101	3.6	1.1	W	1056	3.4	1.0
	1719	7.4	2.3		1711	8.3	2.5
14	0048	1.0	0.3	29	0034	-0.1	0.0
W	0753	5.1	1.6	Th	0732	5.7	1.7
	1202	4.1	1.2		1217	3.7	1.1
	1824	6.8	2.1		1829	7.7	2.3
15	0203	1.3	0.4	30	0150	0.2	0.1
Th	0920	5.2	1.6	F	0848	6.1	1.9
	1342	4.2	1.3		1359	3.5	1.1
	1954	6.4	2.0		2003	7.2	2.2
				31	0301	0.3	0.1
				Sa	0950	6.8	2.1
					1532	2.7	0.8
					2131	7.2	2.2

NOVEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0401	0.4	0.1	16	0345	1.6	0.5
Su	1038	7.6	2.3	M	1025	7.2	2.2
	1643	1.5	0.5		1642	1.9	0.6
	2244	7.4	2.3		2239	6.1	1.9
2	0454	0.5	0.2	17	0430	1.7	0.5
M	1118	8.5	2.6	Tu	1059	7.9	2.4
	1736	0.4	0.1		1727	0.9	0.3
	2344	7.6	2.3		2334	6.4	2.0
3	0536	0.7	0.2	18	0507	1.8	0.5
Tu	1156	9.2	2.8	W	1131	8.5	2.6
	1822	-0.7	-0.2		1806	0.0	0.0
4	0037	7.7	2.3	19	0021	6.7	2.0
W	0617	0.9	0.3	Th	0548	1.8	0.5
	1232	9.7	3.0		1203	9.1	2.8
	1907	-1.4	-0.4		1845	-0.9	-0.3
5	0124	7.7	2.3	20	0106	6.9	2.1
Th	0655	1.2	0.4	F	0624	1.9	0.6
	1307	9.9	3.0		1235	9.6	2.9
	1946	-1.8	-0.5		1926	-1.6	-0.5
6	0210	7.5	2.3	21	0149	7.0	2.1
F	0731	1.6	0.5	Sa	0702	2.1	0.6
	1340	9.9	3.0		1314	10.0	3.0
	2027	-1.8	-0.5		2006	-2.1	-0.6
7	0251	7.3	2.2	22	0234	7.0	2.1
Sa	0809	2.0	0.6	Su	0741	2.2	0.7
	1415	9.7	3.0		1352	10.2	3.1
	2107	-1.6	-0.5		2051	-2.2	-0.7
8	0336	6.9	2.1	23	0320	6.9	2.1
Su	0841	2.5	0.8	M	0823	2.4	0.7
	1450	9.3	2.8		1433	10.1	3.1
	2145	-1.2	-0.4		2137	-2.1	-0.6
9	0418	6.4	2.0	24	0410	6.7	2.0
M	0918	2.9	0.9	Tu	0911	2.6	0.8
	1525	8.8	2.7		1518	9.8	3.0
	2227	-0.6	-0.2		2227	-1.8	-0.5
10	0507	6.0	1.8	25	0504	6.5	2.0
Tu	0955	3.3	1.0	W	1000	2.9	0.9
	1602	8.2	2.5		1612	9.2	2.8
	2312	0.0	0.0		2317	-1.2	-0.4
11	0559	5.7	1.7	26	0602	6.5	2.0
W	1040	3.7	1.1	Th	1106	3.1	0.9
	1647	7.5	2.3		1712	8.4	2.6
12	0003	0.5	0.2	27	0015	-0.6	-0.2
Th	0703	5.6	1.7	F	0703	6.7	2.0
	1143	4.0	1.2		1226	3.1	0.9
	1742	6.8	2.1		1824	7.5	2.3
13	0100	1.0	0.3	28	0113	0.1	0.0
F	0810	5.7	1.7	Sa	0805	7.1	2.2
	1308	4.0	1.2		1355	2.7	0.8
	1854	6.3	1.9		1947	6.8	2.1
14	0201	1.3	0.4	29	0214	0.7	0.2
Sa	0906	6.1	1.9	Su	0904	7.6	2.3
	1438	3.6	1.1		1519	1.9	0.6
	2020	6.0	1.8		2113	6.4	2.0
15	0256	1.5	0.5	30	0315	1.2	0.4
Su	0948	6.6	2.0	M	0953	8.2	2.5
	1550	2.9	0.9		1629	0.9	0.3
	2137	6.0	1.8		2233	6.3	1.9

DECEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0410	1.6	0.5	16	0314	2.4	0.7
Tu	1040	8.8	2.7	W	0956	8.0	2.4
	1726	-0.1	0.0		1651	0.8	0.2
	2339	6.4	2.0		2307	5.5	1.7
2	0459	2.0	0.6	17	0406	2.6	0.8
W	1121	9.3	2.8	Th	1039	8.6	2.6
	1813	-0.9	-0.3		1741	-0.2	-0.1
3	0035	6.6	2.0	18	0006	5.9	1.8
Th	0547	2.2	0.7	F	0502	2.7	0.8
	1203	9.5	2.9		1124	9.2	2.8
	1857	-1.4	-0.4		1829	-1.1	-0.3
4	0122	6.7	2.0	19	0056	6.3	1.9
F	0630	2.4	0.7	Sa	0552	2.7	0.8
	1240	9.7	3.0		1208	9.8	3.0
	1936	-1.7	-0.5		1912	-1.9	-0.6
5	0205	6.8	2.1	20	0143	6.6	2.0
Sa	0709	2.5	0.8	Su	0640	2.5	0.8
	1317	9.6	2.9		1253	10.3	3.1
	2016	-1.7	-0.5		1957	-2.4	-0.7
6	0247	6.8	2.1	21	0229	6.9	2.1
Su	0747	2.7	0.8	M	0728	2.4	0.7
	1355	9.5	2.9		1341	10.5	3.2
	2054	-1.6	-0.5		2042	-2.7	-0.8
7	0327	6.7	2.0	22	0315	7.1	2.2
M	0826	2.8	0.9	Tu	0818	2.3	0.7
	1431	9.2	2.8		1429	10.5	3.2
	2130	-1.3	-0.4		2128	-2.6	-0.8
8	0405	6.5	2.0	23	0400	7.2	2.2
Tu	0902	3.0	0.9	W	0909	2.2	0.7
	1507	8.8	2.7		1518	10.1	3.1
	2208	-0.9	-0.3		2213	-2.2	-0.7
9	0448	6.4	2.0	24	0446	7.4	2.3
W	0944	3.2	1.0	Th	1004	2.1	0.6
	1542	8.3	2.5		1610	9.4	2.9
	2245	-0.5	-0.2		2259	-1.5	-0.5
10	0527	6.3	1.9	25	0535	7.5	2.3
Th	1027	3.3	1.0	F	1106	2.1	0.6
	1624	7.7	2.3		1706	8.4	2.6
	2325	0.0	0.0		2345	-0.7	-0.2
11	0612	6.3	1.9	26	0623	7.7	2.3
F	1119	3.5	1.1	Sa	1215	2.1	0.6
	1709	7.1	2.2		1809	7.3	2.2
12	0004	0.6	0.2	27	0034	0.3	0.1
Sa	0657	6.4	2.0	Su	0716	7.9	2.4
	1223	3.5	1.1		1331	1.8	0.5
	1802	6.3	1.9		1926	6.2	1.9
13	0044	1.1	0.3	28	0124	1.2	0.4
Su	0743	6.6	2.0	M	0813	8.2	2.5
	1337	3.2	1.0		1454	1.3	0.4
	1911	5.7	1.7		2054	5.6	1.7
14	0133	1.6	0.5	29	0222	2.0	0.6
M	0825	7.0	2.1	Tu	0908	8.4	2.6
	1451	2.6	0.8		1609	0.7	0.2
	2033	5.3	1.6		2222	5.4	1.6
15	0222	2.1	0.6	30	0324	2.7	0.8
Tu	0914	7.4	2.3	W	1001	8.6	2.6
	1600	1.8	0.5		1715	0.0	0.0
	2156	5.3	1.6		2339	5.6	1.7
				31	0423	3.0	0.9
				Th	1054	8.8	2.7
					1805	-0.6	-0.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

DUTCH HARBOR, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0022	-1.4	-0.4	16	0047	-0.1	0.0
Th	0854	4.1	1.2	F	1051	3.8	1.2
	1218	3.8	1.2		1700	3.5*	1.1*
	1656	4.5	1.4				
2	0117	-1.1	-0.3	17	0119	0.1	0.0
F	0927	4.2	1.3	Sa	1045	3.7	1.1
	1400	3.4	1.0		1800	3.2*	1.0*
	1813	4.1	1.2				
3	0213	-0.7	-0.2	18	0151	0.4	0.1
Sa	1002	4.3	1.3	Su	1039	3.7	1.1
	1527	2.8	0.9				
	1948	3.6	1.1				
4	0306	-0.2	-0.1	19	0223	0.7	0.2
Su	1034	4.4	1.3	M	1036	3.6	1.1
	1643	2.1	0.6		1725	2.4	0.7
	2129	3.2	1.0		1925	2.5	0.8
5	0401	0.5	0.2	20	0256	1.1	0.3
M	1109	4.5	1.4	Tu	1036	3.6	1.1
	1748	1.4	0.4		1733	1.9	0.6
	2309	3.0	0.9		2206	2.4	0.7
6	0453	1.2	0.4	21	0333	1.6	0.5
Tu	1141	4.5	1.4	W	1038	3.6	1.1
	1848	0.8	0.2		1755	1.3	0.4
7	0050	3.0	0.9	22	0004	2.4	0.7
W	0545	1.8	0.5	Th	0403	2.1	0.6
	1213	4.4	1.3		1045	3.8	1.2
	1933	0.3	0.1		1827	0.6	0.2
8	0226	3.1	0.9	23	0143	2.7	0.8
Th	0641	2.4	0.7	F	0433	2.5	0.8
	1241	4.3	1.3		1103	4.1	1.2
	2020	-0.1	0.0		1905	0.0	0.0
9	0352	3.3	1.0	24	0313	3.0	0.9
F	0736	2.9	0.9	Sa	0509	2.9	0.9
	1308	4.2	1.3		1132	4.3	1.3
	2104	-0.3	-0.1		1948	-0.6	-0.2
10	0515	3.5	1.1	25	1207	4.6	1.4
Sa	0827	3.3	1.0	Su	2033	-1.0	-0.3
	1324	4.0	1.2				
	2145	-0.4	-0.1				
11	0630	3.7	1.1	26	1253	4.8	1.5
Su	0918	3.6	1.1	M	2124	-1.3	-0.4
	1336	4.0	1.2				
	2223	-0.4	-0.1				
12	0600	3.6*	1.1*	27	1347	4.8	1.5
M	1339	4.0	1.2	Tu	2215	-1.4	-0.4
	2259	-0.4	-0.1				
13	0700	3.7*	1.1*	28	0648	3.5	1.1
Tu	1337	4.0	1.2	W	0904	3.4	1.0
	2337	-0.3	-0.1		1446	4.7	1.4
					2308	-1.3	-0.4
14	0700	3.5*	1.1*	29	0724	3.5	1.1
W	1339	3.9	1.2	Th	1033	3.3	1.0
					1549	4.4	1.3
15	0012	-0.2	-0.1	30	0000	-1.0	-0.3
Th	1111	3.9	1.2	F	0756	3.6	1.1
					1212	3.0	0.9
					1705	4.0	1.2
				31	0056	-0.6	-0.2
				Sa	0831	3.7	1.1
					1339	2.5	0.8
					1831	3.5	1.1

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0147	0.0	0.0	16	0111	0.9	0.3
Su	0907	3.8	1.2	M	0848	3.0	0.9
	1505	1.9	0.6		1448	2.1	0.6
	2014	3.1	0.9		1918	2.5	0.8
2	0243	0.6	0.2	17	0152	1.3	0.4
M	0942	3.9	1.2	Tu	0852	3.0	0.9
	1614	1.2	0.4		1541	1.5	0.5
	2158	2.9	0.9		2123	2.4	0.7
3	0342	1.2	0.4	18	0236	1.8	0.5
Tu	1018	3.9	1.2	W	0903	3.2	1.0
	1713	0.6	0.2		1624	0.9	0.3
	2338	2.9	0.9		2312	2.6	0.8
4	0442	1.7	0.5	19	0321	2.2	0.7
W	1053	3.9	1.2	Th	0921	3.3	1.0
	1810	0.1	0.0		1706	0.3	0.1
5	0105	3.1	0.9	20	0039	2.8	0.9
Th	0543	2.2	0.7	F	0403	2.6	0.8
	1128	3.9	1.2		0946	3.6	1.1
	1859	-0.2	-0.1		1748	-0.2	-0.1
6	0221	3.3	1.0	21	0145	3.0	0.9
F	0642	2.6	0.8	Sa	0448	2.8	0.9
	1200	3.8	1.2		1022	3.9	1.2
	1942	-0.4	-0.1		1833	-0.7	-0.2
7	0330	3.4	1.0	22	0251	3.2	1.0
Sa	0732	2.9	0.9	Su	0537	3.0	0.9
	1229	3.7	1.1		1107	4.1	1.2
	2027	-0.5	-0.2		1923	-1.0	-0.3
8	0435	3.4	1.0	23	0336	3.2	1.0
Su	0814	3.1	0.9	M	0623	3.0	0.9
	1254	3.7	1.1		1154	4.3	1.3
	2107	-0.5	-0.2		2012	-1.2	-0.4
9	0545	3.4	1.0	24	0421	3.2	1.0
M	0843	3.2	1.0	Tu	0713	3.0	0.9
	1312	3.7	1.1		1253	4.3	1.3
	2148	-0.4	-0.1		2104	-1.2	-0.4
10	0600	3.3*	1.0*	25	0457	3.2	1.0
Tu	1327	3.7	1.1	W	0815	2.8	0.9
	2226	-0.3	-0.1		1352	4.2	1.3
					2154	-1.0	-0.3
11	0700	3.3*	1.0*	26	0535	3.2	1.0
W	1352	3.7	1.1	Th	0929	2.6	0.8
	2258	-0.2	-0.1		1458	4.0	1.2
					2246	-0.6	-0.2
12	0700	3.1*	0.9*	27	0611	3.2	1.0
Th	1424	3.6	1.1	F	1048	2.3	0.7
	2330	0.0	0.0		1611	3.6	1.1
					2337	-0.2	-0.1
13	0700	3.0*	0.9*	28	0646	3.2	1.0
F	1459	3.4	1.0	Sa	1204	1.9	0.6
					1737	3.3	1.0
14	0004	0.2	0.1				
Sa	0900	3.1	0.9				
	1221	2.9	0.9				
	1545	3.1	0.9				
15	0036	0.5	0.2				
Su	0849	3.0	0.9				
	1354	2.6	0.8				
	1721	2.7	0.8				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0033	0.4	0.1	16	0621	2.7	0.8
Su	0722	3.3	1.0	M	1248	1.4	0.4
	1326	1.4	0.4		1859	2.5	0.8
	1913	3.0	0.9				
2	0132	1.0	0.3	17	0039	1.7	0.5
M	0759	3.3	1.0	Tu	0632	2.8	0.9
	1436	0.9	0.3		1339	0.9	0.3
	2055	2.9	0.9		2049	2.7	0.8
3	0235	1.5	0.5	18	0128	2.2	0.7
Tu	0837	3.3	1.0	W	0654	2.9	0.9
	1538	0.4	0.1		1435	0.4	0.1
	2228	3.0	0.9		2226	2.9	0.9
4	0343	1.9	0.6	19	0230	2.5	0.8
W	0918	3.3	1.0	Th	0726	3.1	0.9
	1634	0.0	0.0		1527	-0.1	0.0
	2352	3.2	1.0		2342	3.2	1.0
5	0453	2.2	0.7	20	0339	2.8	0.9
Th	1000	3.3	1.0	F	0808	3.3	1.0
	1725	-0.2	-0.1		1620	-0.5	-0.2
6	0056	3.4	1.0	21	0034	3.3	1.0
F	0552	2.4	0.7	Sa	0432	2.9	0.9
	1039	3.3	1.0		0859	3.5	1.1
	1814	-0.4	-0.1		1712	-0.8	-0.2
7	0155	3.4	1.0	22	0123	3.4	1.0
Sa	0645	2.6	0.8	Su	0520	3.0	0.9
	1115	3.3	1.0		0956	3.7	1.1
	1659	-0.4	-0.1		1805	-1.0	-0.3
8	0251	3.4	1.0	23	0208	3.4	1.0
Su	0724	2.7	0.8	M	0606	2.9	0.9
	1151	3.3	1.0		1057	3.8	1.2
	1943	-0.4	-0.1		1857	-1.0	-0.3
9	0343	3.3	1.0	24	0243	3.4	1.0
M	0800	2.8	0.9	Tu	0657	2.7	0.8
	1218	3.3	1.0		1159	3.8	1.2
	2023	-0.3	-0.1		1947	-0.9	-0.3
10	0433	3.1	0.9	25	0319	3.3	1.0
Tu	0821	2.8	0.9	W	0751	2.4	0.7
	1250	3.3	1.0		1305	3.7	1.1
	2101	-0.2	-0.1		2038	-0.6	-0.2
11	0516	3.0	0.9	26	0354	3.2	1.0
W	0839	2.8	0.9	Th	0848	2.1	0.6
	1318	3.3	1.0		1414	3.5	1.1
	2136	0.0	0.0		2127	-0.1	0.0
12	0548	2.9	0.9	27	0426	3.2	1.0
Th	0901	2.7	0.8	F	0954	1.7	0.5
	1357	3.2	1.0		1530	3.2	1.0
	2206	0.2	0.1		2219	0.5	0.2
13	0605	2.7	0.8	28	0458	3.2	1.0
F	0943	2.5	0.8	Sa	1100	1.2	0.4
	1446	3.0	0.9		1657	3.0	0.9
	2238	0.5	0.2		2312	1.0	0.3
14	0607	2.7	0.8	29	0529	3.1	0.9
Sa	1043	2.2	0.7	Su	1202	0.8	0.2
	1549	2.8	0.9		1835	2.9	0.9
	2310	0.9	0.3				
15	0613	2.7	0.8	30	0015	1.6	0.5
Su	1142	1.9	0.6	M	0604	3.1	0.9
	1715	2.6	0.8		1304	0.4	0.1
	2350	1.3	0.4		2011	3.0	0.9
				31	0130	2.1	0.6
				Tu	0639	3.1	0.9
					1400	0.1	0.0
					2137	3.3	1.0

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

DUTCH HARBOR, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0246	2.4	0.7	16	0113	3.0	0.9
W	0716	3.0	0.9	Th	0517	3.4	1.0
	1456	-0.2	-0.1		1356	-0.6	-0.2
	2249	3.5	1.1		2234	3.6	1.1
2	0410	2.5	0.8	17	0235	3.2	1.0
Th	0802	2.9	0.9	F	0609	3.5	1.1
	1547	-0.3	-0.1		1452	-0.9	-0.3
	2348	3.6	1.1		2325	3.7	1.1
3	0517	2.6	0.8	18	0344	3.2	1.0
F	0847	2.9	0.9	Sa	0716	3.5	1.1
	1637	-0.4	-0.1		1548	-1.1	-0.3
4	0037	3.7	1.1	19	0011	3.8	1.2
Sa	0610	2.6	0.8	Su	0443	3.1	0.9
	0929	2.9	0.9		0830	3.5	1.1
	1723	-0.4	-0.1		1644	-1.1	-0.3
5	0126	3.6	1.1	20	0050	3.8	1.2
Su	0651	2.6	0.8	M	0537	2.9	0.9
	1015	2.9	0.9		0943	3.5	1.1
	1808	-0.3	-0.1		1737	-0.9	-0.3
6	0205	3.5	1.1	21	0122	3.8	1.2
M	0721	2.6	0.8	Tu	0630	2.6	0.8
	1100	3.0	0.9		1058	3.4	1.0
	1849	-0.2	-0.1		1830	-0.6	-0.2
7	0246	3.4	1.0	22	0154	3.7	1.1
Tu	0748	2.6	0.8	W	0726	2.2	0.7
	1142	3.0	0.9		1215	3.3	1.0
	1926	0.0	0.0		1919	-0.2	-0.1
8	0316	3.2	1.0	23	0228	3.6	1.1
W	0810	2.5	0.8	Th	0818	1.7	0.5
	1224	2.9	0.9		1335	3.1	0.9
	2001	0.3	0.1		2009	0.4	0.1
9	0336	3.0	0.9	24	0257	3.6	1.1
Th	0835	2.3	0.7	F	0913	1.2	0.4
	1313	2.9	0.9		1500	2.9	0.9
	2033	0.6	0.2		2058	1.0	0.3
10	0344	2.9	0.9	25	0322	3.5	1.1
F	0907	2.0	0.6	Sa	1006	0.7	0.2
	1412	2.7	0.8		1635	2.9	0.9
	2100	0.9	0.3		2150	1.7	0.5
11	0350	2.8	0.9	26	0350	3.4	1.0
Sa	0945	1.7	0.5	Su	1101	0.3	0.1
	1525	2.6	0.8		1811	3.0	0.9
	2130	1.4	0.4		2249	2.3	0.7
12	0354	2.9	0.9	27	0413	3.3	1.0
Su	1031	1.2	0.4	M	1150	-0.1	0.0
	1652	2.6	0.8		1944	3.2	1.0
	2212	1.8	0.5				
13	0401	3.0	0.9	28	0009	2.7	0.8
M	1119	0.7	0.2	Tu	0435	3.2	1.0
	1832	2.7	0.8		1241	-0.3	-0.1
	2254	2.3	0.7		2103	3.5	1.1
14	0416	3.1	0.9	29	0152	3.0	0.9
Tu	1205	0.2	0.1	W	0453	3.1	0.9
	2012	3.0	0.9		1328	-0.4	-0.1
	2354	2.7	0.8		2205	3.7	1.1
15	0441	3.3	1.0	30	1413	-0.4	-0.1
W	1301	-0.2	-0.1	Th	2251	3.9	1.2
	2134	3.3	1.0				

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1501	-0.4	-0.1	16	0209	3.6	1.1
F	2339	3.9	1.2	Sa	0539	3.9	1.2
					1425	-1.4	-0.4
					2301	4.0	1.2
2	1548	-0.4	-0.1	17	0331	3.4	1.0
Sa				Su	0649	3.7	1.1
					1523	-1.3	-0.4
					2336	4.1	1.2
3	0020	3.9	1.2	18	0437	3.1	0.9
Su	1632	-0.3	-0.1	M	0818	3.5	1.1
					1617	-1.0	-0.3
4	0054	3.8	1.2	19	0009	4.1	1.2
M	1714	-0.1	0.0	Tu	0543	2.6	0.8
					0947	3.2	1.0
					1711	-0.6	-0.2
5	0124	3.7	1.1	20	0039	4.1	1.2
Tu	0728	2.6	0.8	W	0641	2.0	0.6
	0951	2.7	0.8		1117	3.0	0.9
	1751	0.1	0.0		1759	0.0	0.0
6	0147	3.6	1.1	21	0110	4.0	1.2
W	0743	2.4	0.7	Th	0734	1.4	0.4
	1057	2.6	0.8		1250	2.8	0.9
	1823	0.4	0.1		1848	0.7	0.2
7	0201	3.4	1.0	22	0138	4.0	1.2
Th	0804	2.1	0.6	F	0829	0.8	0.2
	1206	2.5	0.8		1424	2.7	0.8
	1848	0.8	0.2		1938	1.4	0.4
8	0206	3.3	1.0	23	0205	3.9	1.2
F	0825	1.8	0.5	Sa	0918	0.2	0.1
	1321	2.4	0.7		1601	2.8	0.9
	1920	1.2	0.4		2029	2.1	0.6
9	0211	3.3	1.0	24	0230	3.8	1.2
Sa	0854	1.3	0.4	Su	1006	-0.2	-0.1
	1448	2.4	0.7		1741	3.0	0.9
	1945	1.7	0.5		2121	2.7	0.8
10	0212	3.3	1.0	25	0248	3.7	1.1
Su	0930	0.8	0.2	M	1049	-0.4	-0.1
	1619	2.5	0.8		1913	3.3	1.0
	2014	2.2	0.7		2234	3.1	0.9
11	0219	3.5	1.1	26	0301	3.6	1.1
M	1009	0.2	0.1	Tu	1134	-0.6	-0.2
	1805	2.8	0.9		2033	3.6	1.1
	2042	2.7	0.8				
12	0235	3.7	1.1	27	0014	3.4	1.0
Tu	1051	-0.3	-0.1	W	0301	3.5	1.1
					1217	-0.7	-0.2
					2128	3.8	1.2
13	0300	3.8	1.2	28	0400	3.4*	1.0*
W	1139	-0.7	-0.2	Th	1259	-0.6	-0.2
	2000	3.4*	1.0*		2214	4.0	1.2
14	0339	3.9	1.2	29	1340	-0.6	-0.2
Th	1232	-1.1	-0.3	F	2256	4.0	1.2
	2143	3.8	1.2				
15	0033	3.6	1.1	30	1422	-0.5	-0.2
F	0427	3.9	1.2	Sa	2330	4.0	1.2
	1331	-1.3	-0.4				
	2222	3.9	1.2				
				31	1503	-0.4	-0.1
				Su	2359	3.9	1.2

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1540	-0.2	-0.1	16	0422	2.6	0.8
M				Tu	0826	3.2	1.0
					1553	-0.6	-0.2
					2325	4.1	1.2
2	0021	3.8	1.2	17	0531	1.9	0.6
Tu	1616	0.1	0.0	W	1006	2.8	0.9
					1645	0.0	0.0
					2356	4.2	1.3
3	0036	3.7	1.1	18	0630	1.1	0.3
W	1648	0.4	0.1	Th	1149	2.6	0.8
					1735	0.7	0.2
4	0047	3.6	1.1	19	0025	4.2	1.3
Th	0741	2.1	0.6	F	0725	0.4	0.1
	1034	2.2	0.7		1330	2.6	0.8
	1717	0.8	0.2		1826	1.4	0.4
5	0049	3.5	1.1	20	0055	4.1	1.2
F	0745	1.6	0.5	Sa	0817	-0.1	0.0
	1218	2.1	0.6		1507	2.7	0.8
	1745	1.3	0.4		1918	2.1	0.6
6	0051	3.5	1.1	21	0121	4.0	1.2
Sa	0804	1.1	0.3	Su	0903	-0.5	-0.2
	1356	2.2	0.7		1643	3.0	0.9
	1800	1.8	0.5		2014	2.6	0.8
7	0052	3.6	1.1	22	0146	3.9	1.2
Su	0829	0.5	0.2	M	0948	-0.8	-0.2
	1542	2.4	0.7		1809	3.3	1.0
	1822	2.3	0.7		2114	3.1	0.9
8	0103	3.8	1.2	23	0201	3.7	1.1
M	0901	-0.1	0.0	Tu	1030	-0.9	-0.3
					1925	3.5	1.1
					2227	3.4	1.0
9	0118	4.0	1.2	24	0212	3.6	1.1
Tu	0943	-0.6	-0.2	W	1114	-0.9	-0.3
					2037	3.7	1.1
10	0150	4.2	1.3	25	0400	3.4*	1.0*
W	1028	-1.1	-0.3	Th	1152	-0.8	-0.2
					2133	3.8	1.2
11	0225	4.4	1.3	26	0400	3.4*	1.0*
Th	1119	-1.5	-0.5	F	1231	-0.7	-0.2
					2219	3.8	1.2
12	0316	4.4	1.3	27	1309	-0.6	-0.2
F	1212	-1.6	-0.5	Sa	2249	3.8	1.2
	2121	3.8	1.2				
	2344	3.7	1.1				
13	0418	4.3	1.3	28	1345	-0.5	-0.2
Sa	1307	-1.7	-0.5	Su	2313	3.7	1.1
	2148	3.9	1.2				
14	0129	3.5	1.1	29	1423	-0.3	-0.1
Su	0527	4.0	1.2	M	2324	3.7	1.1
	1403	-1.5	-0.5				
	2220	4.0	1.2				
15	0306	3.2	1.0	30	1455	0.0	0.0
M	0653	3.6	1.1	Tu	2336	3.6	1.1
	1457	-1.1	-0.3				
	2250	4.1	1.2				

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
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DUTCH HARBOR, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	1527	0.4	0.1	16	0512	1.0	0.3
W	2338	3.5	1.1	Th	1038	2.6	0.8
					1626	0.7	0.2
					2307	3.9	1.2
2	1552	0.8	0.2	17	0607	0.3	0.1
Th	2339	3.4	1.0	F	1220	2.6	0.8
					1718	1.4	0.4
					2344	4.0	1.2
3	0654	1.6	0.5	18	0700	-0.3	-0.1
F	1107	1.9	0.6	Sa	1352	2.7	0.8
	1624	1.2	0.4		1818	1.9	0.6
	2339	3.4	1.0				
4	0703	1.0	0.3	19	0017	3.9	1.2
Sa	1258	2.0	0.6	Su	0751	-0.7	-0.2
	1643	1.7	0.5		1518	3.0	0.9
	2342	3.6	1.1		1917	2.4	0.7
5	0727	0.4	0.1	20	0048	3.8	1.2
Su	1445	2.3	0.7	M	0839	-0.9	-0.3
	1654	2.2	0.7		1634	3.1	0.9
	2353	3.8	1.2		2012	2.8	0.9
6	0759	-0.2	-0.1	21	0115	3.7	1.1
M				Tu	0923	-1.0	-0.3
					1747	3.3	1.0
					2108	3.0	0.9
7	0011	4.0	1.2	22	0138	3.6	1.1
Tu	0835	-0.8	-0.2	W	1007	-1.0	-0.3
					1903	3.3	1.0
					2156	3.2	1.0
8	0043	4.3	1.3	23	0153	3.5	1.1
W	0921	-1.3	-0.4	Th	1045	-0.9	-0.3
					2018	3.4	1.0
					2237	3.3	1.0
9	0126	4.5	1.4	24	0158	3.4	1.0
Th	1007	-1.6	-0.5	F	1124	-0.7	-0.2
					2130	3.4	1.0
					2330	3.3	1.0
10	0218	4.5	1.4	25	0159	3.4	1.0
F	1058	-1.8	-0.5	Sa	1159	-0.6	-0.2
					2209	3.4	1.0
11	0315	4.4	1.3	26	0500	3.0*	0.9*
Sa	1153	-1.8	-0.5	Su	1230	-0.4	-0.1
	2027	3.5	1.1		2224	3.3	1.0
	2316	3.3	1.0				
12	0420	4.2	1.3	27	0500	2.9*	0.9*
Su	1247	-1.6	-0.5	M	1306	-0.2	-0.1
	2057	3.5	1.1		2221	3.2	1.0
13	0103	3.0	0.9	28	0500	2.7*	0.8*
M	0536	3.7	1.1	Tu	1341	0.1	0.0
	1339	-1.2	-0.4		2222	3.1	0.9
	2127	3.7	1.1				
14	0239	2.4	0.7	29	1413	0.5	0.2
Tu	0708	3.2	1.0	W	2216	3.1	0.9
	1436	-0.6	-0.2				
	2201	3.8	1.2				
15	0403	1.7	0.5	30	0512	1.9	0.6
W	0851	2.8	0.9	Th	0745	2.0	0.6
	1528	0.0	0.0		1442	0.9	0.3
	2235	3.9	1.2		2218	3.0	0.9
				31	0516	1.5	0.5
				F	1009	1.9	0.6
					1518	1.3	0.4
					2220	3.1	0.9

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0541	0.9	0.3	16	0627	-0.7	-0.2
Sa	1201	2.1	0.6	Su	1351	3.1	0.9
	1545	1.8	0.5		1822	2.2	0.7
	2224	3.2	1.0		2340	3.5	1.1
2	0610	0.3	0.1	17	0718	-0.9	-0.3
Su	1337	2.3	0.7	M	1459	3.2	1.0
	1617	2.2	0.7		1919	2.5	0.8
	2243	3.5	1.1				
3	0642	-0.3	-0.1	18	0012	3.5	1.1
M	2308	3.7	1.1	Tu	0804	-0.9	-0.3
					1557	3.2	1.0
					2007	2.6	0.8
4	0724	-0.8	-0.2	19	0051	3.4	1.0
Tu	2343	4.0	1.2	W	0848	-0.8	-0.2
					1657	3.2	1.0
					2048	2.8	0.9
5	0808	-1.2	-0.4	20	0119	3.3	1.0
W				Th	0933	-0.7	-0.2
					1800	3.1	0.9
					2120	2.9	0.9
6	0025	4.3	1.3	21	0141	3.3	1.0
Th	0856	-1.5	-0.5	F	1010	-0.5	-0.2
					1901	3.0	0.9
					2145	2.9	0.9
7	0121	4.4	1.3	22	0203	3.2	1.0
F	0947	-1.6	-0.5	Sa	1048	-0.3	-0.1
	1815	3.0	0.9		1953	2.9	0.9
	2018	2.9	0.9		2217	2.8	0.9
8	0216	4.3	1.3	23	0228	3.1	0.9
Sa	1037	-1.5	-0.5	Su	1120	-0.1	0.0
	1843	3.0	0.9		2018	2.8	0.9
	2145	2.8	0.9		2311	2.7	0.8
9	0322	4.1	1.2	24	0303	2.9	0.9
Su	1129	-1.3	-0.4	M	1151	0.2	0.1
	1915	3.1	0.9		2026	2.7	0.8
	2316	2.5	0.8				
10	0435	3.7	1.1	25	0021	2.5	0.8
M	1222	-0.9	-0.3	Tu	0403	2.6	0.8
	1950	3.2	1.0		1224	0.5	0.2
					2021	2.7	0.8
11	0051	2.0	0.6	26	0134	2.2	0.7
Tu	0601	3.3	1.0	W	0529	2.4	0.7
	1318	-0.3	-0.1		1258	0.9	0.3
	2024	3.3	1.0		2020	2.6	0.8
12	0218	1.4	0.4	27	0233	1.7	0.5
W	0742	2.9	0.9	Th	0728	2.2	0.7
	1416	0.3	0.1		1337	1.3	0.4
	2100	3.4	1.0		2024	2.7	0.8
13	0329	0.8	0.2	28	0314	1.2	0.4
Th	0927	2.7	0.8	F	0931	2.2	0.7
	1515	0.9	0.3		1419	1.7	0.5
	2141	3.5	1.1		2032	2.8	0.9
14	0436	0.1	0.0	29	0356	0.7	0.2
F	1109	2.8	0.9	Sa	1113	2.4	0.7
	1618	1.5	0.5		1511	2.1	0.6
	2220	3.6	1.1		2046	2.9	0.9
15	0535	-0.3	-0.1	30	0439	0.2	0.1
Sa	1235	2.9	0.9	Su	1233	2.7	0.8
	1723	1.9	0.6		1553	2.4	0.7
	2301	3.6	1.1		2112	3.2	1.0
				31	0521	-0.3	-0.1
				M	1342	2.9	0.9
					1635	2.7	0.8
					2147	3.4	1.0

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0607	-0.7	-0.2	16	0723	-0.5	-0.2
Tu	1421	3.0	0.9	W	1509	3.4	1.0
	1717	2.8	0.9		2000	2.6	0.8
	2233	3.7	1.1				
2	0654	-1.0	-0.3	17	0019	3.2	1.0
W	1509	3.0	0.9	Th	0806	-0.4	-0.1
	1800	2.8	0.9		1558	3.2	1.0
	2326	3.9	1.2		2035	2.6	0.8
3	0741	-1.2	-0.4	18	0054	3.1	0.9
Th	1547	3.0	0.9	F	0845	-0.2	-0.1
	1846	2.8	0.9		1641	3.1	0.9
					2101	2.6	0.8
4	0023	4.1	1.2	19	0129	3.1	0.9
F	0831	-1.2	-0.4	Sa	0923	0.1	0.0
	1620	3.0	0.9		1709	2.9	0.9
	1942	2.6	0.8		2136	2.5	0.8
5	0122	4.0	1.2	20	0208	3.0	0.9
Sa	0919	-1.0	-0.3	Su	0956	0.4	0.1
	1652	2.9	0.9		1731	2.8	0.9
	2049	2.3	0.7		2208	2.3	0.7
6	0228	3.9	1.2	21	0257	2.8	0.9
Su	1009	-0.7	-0.2	M	1025	0.8	0.2
	1723	3.0	0.9		1739	2.7	0.8
	2205	2.0	0.6		2253	2.0	0.6
7	0344	3.6	1.1	22	0402	2.6	0.8
M	1102	-0.2	-0.1	Tu	1057	1.2	0.4
	1758	3.0	0.9		1742	2.6	0.8
	2324	1.5	0.5		2339	1.7	0.5
8	0510	3.2	1.0	23	0528	2.5	0.8
Tu	1159	0.4	0.1	W	1130	1.6	0.5
	1831	3.1	0.9		1746	2.7	0.8
9	0040	1.0	0.3	24	0028	1.3	0.4
W	0647	3.0	0.9	Th	0713	2.5	0.8
	1255	1.0	0.3		1219	2.0	0.6
	1912	3.2	1.0		1751	2.8	0.9
10	0151	0.5	0.2	25	0119	0.9	0.3
Th	0832	3.0	0.9	F	0857	2.7	0.8
	1405	1.5	0.5		1311	2.4	0.7
	1954	3.2	1.0		1809	2.9	0.9
11	0257	0.0	0.0	26	0212	0.4	0.1
F	1004	3.1	0.9	Sa	1030	3.0	0.9
	1518	1.9	0.6		1424	2.7	0.8
	2039	3.2	1.0		1838	3.1	0.9
12	0357	-0.3	-0.1	27	0301	0.0	0.0
Sa	1124	3.3	1.0	Su	1132	3.2	1.0
	1629	2.2	0.7		1530	3.0	0.9
	2126	3.2	1.0		1917	3.2	1.0
13	0453	-0.6	-0.2	28	0350	-0.4	-0.1
Su	1229	3.5	1.1	M	1221	3.4	1.0
	1736	2.4	0.7		1619	3.1	0.9
	2212	3.2	1.0		2010	3.4	1.0
14	0546	-0.6	-0.2	29	0442	-0.6	-0.2
M	1327	3.5	1.1	Tu	1303	3.5	1.1
	1832	2.5	0.8		1704	3.1	0.9
	2255	3.2	1.0		2113	3.6	1.1
15	0635	-0.6	-0.2	30	0533	-0.8	-0.2
Tu	1421	3.5	1.1	W	1345	3.5	1.1
	1918	2.5	0.8		1744	3.0	0.9
	2337	3.2	1.0		2220	3.7	1.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

DUTCH HARBOR, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0624	-0.8	-0.2	16	0711	0.3	0.1
Th	1413	3.5	1.1	F	1452	3.5	1.1
	1830	2.8	0.9		2024	2.5	0.8
	2322	3.8	1.2				
2	0713	-0.7	-0.2	17	0028	3.0	0.9
F	1448	3.4	1.0	Sa	0746	0.6	0.2
	1921	2.5	0.8		1514	3.4	1.0
					2049	2.3	0.7
3	0028	3.7	1.1	18	0121	2.9	0.9
Sa	0802	-0.4	-0.1	Su	0818	1.0	0.3
	1514	3.3	1.0		1525	3.2	1.0
	2021	2.1	0.6		2121	2.0	0.6
4	0144	3.6	1.1	19	0226	2.8	0.9
Su	0848	0.1	0.0	M	0845	1.4	0.4
	1541	3.3	1.0		1527	3.2	1.0
	2121	1.6	0.5		2153	1.7	0.5
5	0303	3.3	1.0	20	0340	2.7	0.8
M	0939	0.7	0.2	Tu	0910	1.8	0.5
	1611	3.4	1.0		1530	3.2	1.0
	2223	1.1	0.3		2228	1.3	0.4
6	0432	3.2	1.0	21	0514	2.7	0.8
Tu	1035	1.3	0.4	W	0942	2.3	0.7
	1642	3.4	1.0		1530	3.3	1.0
	2324	0.6	0.2		2309	0.9	0.3
7	0611	3.2	1.0	22	0657	2.9	0.9
W	1130	1.9	0.6	Th	1017	2.7	0.8
	1717	3.4	1.0		1541	3.4	1.0
					2349	0.4	0.1
8	0027	0.2	0.1	23	0833	3.2	1.0
Th	0748	3.3	1.0	F	1106	3.1	0.9
	1251	2.4	0.7		1600	3.5	1.1
	1752	3.4	1.0				
9	0127	-0.1	0.0	24	0037	0.1	0.0
F	0914	3.6	1.1	Sa	0949	3.5	1.1
	1412	2.7	0.8		1237	3.4	1.0
	1835	3.3	1.0		1622	3.7	1.1
10	0222	-0.3	-0.1	25	0130	-0.3	-0.1
Sa	1023	3.8	1.2	Su	1038	3.8	1.2
	1539	2.8	0.9		1415	3.6	1.1
	1923	3.2	1.0		1708	3.7	1.1
11	0318	-0.4	-0.1	26	0222	-0.5	-0.2
Su	1122	4.0	1.2	M	1120	4.0	1.2
	1653	2.8	0.9		1531	3.7	1.1
	2017	3.1	0.9		1811	3.8	1.2
12	0410	-0.4	-0.1	27	0317	-0.7	-0.2
M	1214	4.0	1.2	Tu	1155	4.1	1.2
	1754	2.8	0.9		1622	3.6	1.1
	2107	3.1	0.9		1933	3.8	1.2
13	0501	-0.4	-0.1	28	0410	-0.7	-0.2
Tu	1259	4.0	1.2	W	1230	4.1	1.2
	1838	2.8	0.9		1713	3.3	1.0
	2205	3.1	0.9		2052	3.7	1.1
14	0548	-0.2	-0.1	29	0503	-0.6	-0.2
W	1341	3.9	1.2	Th	1259	4.1	1.2
	1920	2.7	0.8		1803	3.0	0.9
	2254	3.1	0.9		2215	3.6	1.1
15	0632	0.0	0.0	30	0552	-0.3	-0.1
Th	1421	3.7	1.1	F	1327	4.0	1.2
	1951	2.6	0.8		1856	2.5	0.8
	2340	3.0	0.9		2334	3.5	1.1
				31	0640	0.1	0.0
				Sa	1353	4.0	1.2
					1948	2.0	0.6

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0100	3.3	1.0	16	0136	2.7	0.8
Su	0729	0.7	0.2	M	0700	1.8	0.5
	1418	4.0	1.2		1355	3.7	1.1
	2042	1.4	0.4		2058	1.5	0.5
2	0228	3.2	1.0	17	0303	2.7	0.8
M	0818	1.4	0.4	Tu	0725	2.2	0.7
	1444	4.0	1.2		1355	3.8	1.2
	2135	0.8	0.2		2127	1.1	0.3
3	0404	3.2	1.0	18	0443	2.9	0.9
Tu	0907	2.1	0.6	W	0740	2.7	0.8
	1510	3.9	1.2		1400	3.9	1.2
	2228	0.3	0.1		2206	0.6	0.2
4	0544	3.3	1.0	19	1407	4.1	1.2
W	1006	2.7	0.8	Th	2238	0.1	0.0
	1535	3.9	1.2				
	2320	0.0	0.0				
5	0717	3.6	1.1	20	1429	4.2	1.3
Th	1120	3.2	1.0	F	2322	-0.3	-0.1
	1600	3.8	1.2				
6	0009	-0.3	-0.1	21	0900	3.9*	1.2*
F	0836	3.9	1.2	Sa	1501	4.4	1.3
	1258	3.5	1.1				
	1625	3.7	1.1				
7	0103	-0.4	-0.1	22	0012	-0.6	-0.2
Sa	0939	4.2	1.3	Su	0800	3.9*	1.2*
					1543	4.4	1.3
8	0152	-0.4	-0.1	23	0101	-0.8	-0.2
Su	1031	4.3	1.3	M	1026	4.3	1.3
					1319	4.1	1.2
					1643	4.3	1.3
9	0241	-0.3	-0.1	24	0157	-0.9	-0.3
M	1120	4.4	1.3	Tu	1051	4.4	1.3
					1453	4.0	1.2
					1758	4.2	1.3
10	0329	-0.2	-0.1	25	0249	-0.8	-0.2
Tu	1157	4.4	1.3	W	1116	4.4	1.3
					1607	3.6	1.1
					1924	3.9	1.2
11	0413	0.0	0.0	26	0342	-0.6	-0.2
W	1233	4.3	1.3	Th	1145	4.4	1.3
					1709	3.1	0.9
					2057	3.6	1.1
12	0456	0.2	0.1	27	0435	-0.2	-0.1
Th	1305	4.2	1.3	F	1210	4.4	1.3
	1925	2.9	0.9		1812	2.5	0.8
	2151	3.0	0.9		2233	3.3	1.0
13	0536	0.5	0.2	28	0523	0.4	0.1
F	1329	4.0	1.2	Sa	1239	4.5	1.4
	1946	2.6	0.8		1903	1.8	0.5
	2300	2.8	0.9				
14	0608	0.9	0.3	29	0009	3.1	0.9
Sa	1345	3.9	1.2	Su	0611	1.1	0.3
	2015	2.3	0.7		1307	4.5	1.4
					1959	1.2	0.4
15	0016	2.7	0.8	30	0150	3.1	0.9
Su	0635	1.3	0.4	M	0700	1.8	0.5
	1351	3.8	1.2		1331	4.5	1.4
	2036	2.0	0.6		2045	0.5	0.2

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0331	3.2	1.0	16	1246	4.2	1.3
Tu	0746	2.5	0.8	W	2055	0.4	0.1
	1356	4.4	1.3				
	2134	0.1	0.0				
2	0507	3.4	1.0	17	1257	4.4	1.3
W	0846	3.1	0.9	Th	2130	-0.1	0.0
	1421	4.3	1.3				
	2223	-0.3	-0.1				
3	0640	3.8	1.2	18	1322	4.6	1.4
Th	0954	3.6	1.1	F	2209	-0.5	-0.2
	1440	4.2	1.3				
	2307	-0.5	-0.2				
4	0759	4.1	1.2	19	1400	4.8	1.5
F	1124	3.9	1.2	Sa	2257	-0.9	-0.3
	1458	4.1	1.2				
	2353	-0.5	-0.2				
5	0902	4.3	1.3	20	1444	4.8	1.5
Sa	1700	3.8*	1.2*	Su	2346	-1.1	-0.3
6	0039	-0.5	-0.2	21	1542	4.7	1.4
Su	0947	4.4	1.3	M			
	1600	3.9*	1.2*				
7	0121	-0.4	-0.1	22	0039	-1.1	-0.3
M	1033	4.5	1.4	Tu	0941	4.2	1.3
					1227	4.0	1.2
					1647	4.5	1.4
8	0207	-0.2	-0.1	23	0132	-1.0	-0.3
Tu	1107	4.5	1.4	W	1001	4.2	1.3
					1412	3.7	1.1
					1806	4.1	1.2
9	0247	0.0	0.0	24	0225	-0.7	-0.2
W	1136	4.4	1.3	Th	1025	4.3	1.3
					1543	3.1	0.9
					1939	3.7	1.1
10	0328	0.2	0.1	25	0319	-0.2	-0.1
Th	1200	4.3	1.3	F	1053	4.4	1.3
					1657	2.4	0.7
					2122	3.3	1.0
11	0403	0.5	0.2	26	0409	0.4	0.1
F	1218	4.2	1.3	Sa	1123	4.5	1.4
					1800	1.6	0.5
					2309	3.0	0.9
12	0435	0.9	0.3	27	0501	1.1	0.3
Sa	1231	4.1	1.2	Su	1154	4.5	1.4
	1936	2.4	0.7		1852	0.9	0.3
	2245	2.5	0.8				
13	0507	1.4	0.4	28	0054	3.0	0.9
Su	1238	4.0	1.2	M	0554	1.8	0.5
	1943	1.9	0.6		1222	4.6	1.4
					1944	0.2	0.1
14	0029	2.5	0.8	29	0236	3.2	1.0
M	0532	1.8	0.5	Tu	0645	2.5	0.8
	1237	4.0	1.2		1254	4.5	1.4
	2001	1.4	0.4		2032	-0.2	-0.1
15	0210	2.6	0.8	30	0406	3.4	1.0
Tu	0547	2.3	0.7	W	0740	3.0	0.9
	1241	4.0	1.2		1322	4.4	1.3
	2027	0.9	0.3		2121	-0.5	-0.2
				31	0536	3.7	1.1
				Th	0839	3.4	1.0
					1347	4.3	1.3
					2207	-0.6	-0.2

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1452	5.4	1.6	16	0028	-0.4	-0.1
Th				F	1255	4.6	1.4
2	0048	-1.4	-0.4	17	0100	-0.2	-0.1
F	1551	4.8	1.5	Sa	1251	4.3	1.3
3	0137	-1.0	-0.3	18	0125	0.1	0.0
Sa	1048	4.3	1.3	Su	1203	4.0	1.2
	1433	4.0	1.2				
	1717	4.1	1.2				
4	0222	-0.4	-0.1	19	0153	0.4	0.1
Su	1039	4.2	1.3	M	1112	3.7	1.1
	1624	3.2	1.0				
	1911	3.3	1.0				
5	0301	0.3	0.1	20	0212	0.9	0.3
M	1047	4.3	1.3	Tu	1027	3.6	1.1
	1725	2.3	0.7				
	2117	2.7	0.8				
6	0337	1.1	0.3	21	0223	1.4	0.4
Tu	1101	4.4	1.3	W	1007	3.7	1.1
	1814	1.5	0.5		1735	1.7	0.5
	2335	2.4	0.7		2235	2.2	0.7
7	0405	1.9	0.6	22	0221	2.0	0.6
W	1114	4.5	1.4	Th	0957	4.0	1.2
	1903	0.7	0.2		1758	0.9	0.3
8	1129	4.6	1.4	23	1001	4.4	1.3
Th	1946	0.2	0.1	F	1835	0.1	0.0
9	1141	4.6	1.4	24	1020	4.8	1.5
F	2028	-0.2	-0.1	Sa	1918	-0.6	-0.2
10	1149	4.7	1.4	25	1052	5.2	1.6
Sa	2110	-0.5	-0.2	Su	2007	-1.1	-0.3
11	1159	4.8	1.5	26	1133	5.5	1.7
Su	2152	-0.6	-0.2	M	2059	-1.5	-0.5
12	1207	4.8	1.5	27	1217	5.6	1.7
M	2234	-0.7	-0.2	Tu	2152	-1.6	-0.5
13	1217	4.8	1.5	28	1309	5.5	1.7
Tu	2315	-0.6	-0.2	W	2247	-1.5	-0.5
14	1233	4.8	1.5	29	1405	5.1	1.6
W	2352	-0.6	-0.2	Th	2337	-1.2	-0.4
15	1247	4.8	1.5	30	1511	4.5	1.4
Th				F			
				31	0029	-0.8	-0.2
				Sa	0934	3.6	1.1
					1222	3.5	1.1
					1633	3.8	1.2

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0112	-0.2	-0.1	16	0046	0.7	0.2
Su	0918	3.6	1.1	M	0927	3.0	0.9
	1435	2.8	0.9		1900	2.5*	0.8*
	1823	3.1	0.9				
2	0154	0.5	0.2	17	0112	1.2	0.4
M	0924	3.7	1.1	Tu	0845	3.0	0.9
	1547	1.9	0.6		1521	1.9	0.6
	2030	2.7	0.8		2000	2.3	0.7
3	0235	1.2	0.4	18	0127	1.7	0.5
Tu	0935	3.8	1.2	W	0825	3.1	0.9
	1640	1.2	0.4		1550	1.2	0.4
	2239	2.5	0.8		2237	2.3	0.7
4	0312	1.9	0.6	19	0127	2.2	0.7
W	0954	4.0	1.2	Th	0819	3.5	1.1
	1736	0.5	0.2		1629	0.4	0.1
5	0045	2.6	0.8	20	0834	3.9	1.2
Th	0336	2.5	0.8	F	1711	-0.2	-0.1
	1009	4.1	1.2				
	1818	0.0	0.0				
6	1027	4.2	1.3	21	0903	4.3	1.3
F	1900	-0.3	-0.1	Sa	1757	-0.8	-0.2
7	1049	4.3	1.3	22	0942	4.7	1.4
Sa	1945	-0.5	-0.2	Su	1846	-1.2	-0.4
8	1107	4.4	1.3	23	1024	4.9	1.5
Su	2030	-0.6	-0.2	M	1940	-1.4	-0.4
9	1129	4.4	1.3	24	1121	5.0	1.5
M	2114	-0.6	-0.2	Tu	2033	-1.4	-0.4
10	1154	4.4	1.3	25	1215	4.8	1.5
Tu	2159	-0.6	-0.2	W	2127	-1.2	-0.4
11	1215	4.4	1.3	26	1318	4.4	1.3
W	2241	-0.5	-0.2	Th	2219	-0.9	-0.3
12	1240	4.3	1.3	27	1430	3.9	1.2
Th	2317	-0.3	-0.1	F	2309	-0.3	-0.1
13	1302	4.0	1.2	28	0725	2.9	0.9
F	2353	-0.1	0.0	Sa	1100	2.6	0.8
					1600	3.3	1.0
					2358	0.3	0.1
14	1318	3.7	1.1				
Sa							
15	0021	0.3	0.1				
Su	1100	3.2	1.0				
	1800	2.8*	0.9*				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0726	2.9	0.9	16	0632	2.4	0.7
Su	1251	2.0	0.6	M	1232	1.7	0.5
	1800	2.8	0.9		1811	2.3	0.7
					2353	1.7	0.5
2	0044	0.9	0.3	17	0609	2.5	0.8
M	0736	3.0	0.9	Tu	1321	1.0	0.3
	1407	1.3	0.4		2044	2.3	0.7
	2005	2.6	0.8				
3	0134	1.6	0.5	18	0021	2.2	0.7
Tu	0751	3.2	1.0	W	0606	2.8	0.9
	1502	0.6	0.2		1412	0.4	0.1
	2202	2.6	0.8				
4	0223	2.1	0.6	19	0610	3.2	1.0
W	0813	3.3	1.0	Th	1455	-0.3	-0.1
	1554	0.1	0.0				
	2345	2.8	0.9				
5	0309	2.6	0.8	20	0639	3.6	1.1
Th	0831	3.4	1.0	F	1540	-0.8	-0.2
	1640	-0.3	-0.1				
6	0121	3.0	0.9	21	0721	3.9	1.2
F	0341	2.9	0.9	Sa	1633	-1.2	-0.4
	0853	3.5	1.1				
	1725	-0.5	-0.2				
7	0918	3.7	1.1	22	0818	4.1	1.2
Sa	1811	-0.7	-0.2	Su	1724	-1.4	-0.4
8	0943	3.8	1.2	23	0914	4.3	1.3
Su	1855	-0.7	-0.2	M	1817	-1.5	-0.5
9	1024	3.8	1.2	24	1012	4.2	1.3
M	1939	-0.6	-0.2	Tu	1907	-1.3	-0.4
10	1057	3.9	1.2	25	1115	4.0	1.2
Tu	2025	-0.5	-0.2	W	1959	-0.9	-0.3
11	1131	3.8	1.2	26	1227	3.6	1.1
W	2107	-0.3	-0.1	Th	2049	-0.4	-0.1
12	1210	3.6	1.1	27	0444	2.6	0.8
Th	2143	-0.1	0.0	F	0829	2.3	0.7
					1353	3.1	0.9
					2138	0.2	0.1
13	1245	3.3	1.0	28	0452	2.6	0.8
F	2225	0.2	0.1	Sa	1014	1.7	0.5
					1539	2.6	0.8
					2227	0.9	0.3
14	0600	2.4*	0.7*	29	0507	2.7	0.8
Sa	1352	2.9	0.9	Su	1135	1.1	0.3
	2257	0.7	0.2		1754	2.4	0.7
					2324	1.6	0.5
15	0717	2.4	0.7	30	0521	2.8	0.9
Su	1048	2.3	0.7	M	1241	0.5	0.2
	1537	2.5	0.8		2005	2.5	0.8
	2324	1.1	0.3				
				31	0024	2.1	0.6
				Tu	0539	2.9	0.9
					1331	-0.1	0.0
					2152	2.8	0.9

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0136	2.6	0.8	16	0344	3.5	1.1
W	0550	3.0	0.9	Th	1327	-1.0	-0.3
	1423	-0.5	-0.2		2200	3.2*	1.0*
	2318	3.1	0.9				
2	0248	2.9	0.9	17	0423	3.7	1.1
Th	0611	3.1	0.9	F	1419	-1.4	-0.4
	1505	-0.7	-0.2		2300	3.4*	1.0*
3	0013	3.3	1.0	18	0520	3.9	1.2
F	0355	3.1	0.9	Sa	1511	-1.7	-0.5
	0630	3.2	1.0				
	1550	-0.8	-0.2				
4	0112	3.3	1.0	19	0629	4.0	1.2
Sa	0430	3.1	0.9	Su	1601	-1.7	-0.5
	0648	3.2	1.0				
	1633	-0.9	-0.3				
5	0215	3.3	1.0	20	0100	3.4*	1.0*
Su	0438	3.2	1.0	M	0739	3.9	1.2
	0747	3.3	1.0		1653	-1.6	-0.5
	1716	-0.8	-0.2				
6	0100	2.9*	0.9*	21	0200	3.2*	1.0*
M	0829	3.4	1.0	Tu	0854	3.7	1.1
	1758	-0.7	-0.2		1742	-1.2	-0.4
7	0200	2.8*	0.9*	22	0209	3.0	0.9
Tu	0921	3.3	1.0	W	0535	2.8	0.9
	1836	-0.5	-0.2		1010	3.3	1.0
					1828	-0.7	-0.2
8	0300	2.7*	0.8*	23	0224	2.9	0.9
W	1010	3.2	1.0	Th	0701	2.3	0.7
	1915	-0.2	-0.1		1136	2.9	0.9
					1914	-0.1	0.0
9	0300	2.5*	0.8*	24	0235	2.9	0.9
Th	1109	3.0	0.9	F	0824	1.6	0.5
	1954	0.1	0.0		1319	2.4	0.7
					1953	0.7	0.2
10	0435	2.4	0.7	25	0247	2.9	0.9
F	0713	2.3	0.7	Sa	0932	1.0	0.3
	1212	2.7	0.8		1533	2.1	0.6
	2023	0.5	0.2		2030	1.4	0.4
11	0401	2.3	0.7	26	0301	3.0	0.9
Sa	0842	1.9	0.6	Su	1039	0.3	0.1
	1348	2.3	0.7		1812	2.3	0.7
	2048	1.1	0.3		2112	2.1	0.6
12	0343	2.3	0.7	27	0315	3.1	0.9
Su	1005	1.4	0.4	M	1128	-0.3	-0.1
	1601	2.1	0.6		2000	2.7*	0.8*
	2113	1.6	0.5				
13	0327	2.5	0.8	28	0315	3.2	1.0
M	1057	0.8	0.2	Tu	1216	-0.7	-0.2
					2000	3.0*	0.9*
14	0318	2.8	0.9	29	0303	3.3	1.0
Tu	1148	0.1	0.0	W	1302	-1.0	-0.3
	2100	2.6*	0.8*		2307	3.5	1.1
15	0319	3.1	0.9	30	1344	-1.1	-0.3
W	1238	-0.5	-0.2	Th	2350	3.7	1.1

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	1425	-1.1	-0.3	16	0337	4.3	1.3
F				Sa	1354	-2.1	-0.6
2	0032	3.7	1.1	17	0445	4.2	1.3
Sa	1505	-1.1	-0.3	Su	1446	-2.0	-0.6
					2300	3.5*	1.1*
3	0114	3.6	1.1	18	0600	3.9	1.2
Su	1547	-1.0	-0.3	M	1536	-1.7	-0.5
4	0151	3.5	1.1	19	0045	3.5	1.1
M	0800	3.1*	0.9*	Tu	0405	3.3	1.0
	1623	-0.8	-0.2		0723	3.5	1.1
					1618	-1.3	-0.4
5	0221	3.3	1.0	20	0045	3.4	1.0
Tu	0900	3.0*	0.9*	W	0532	2.7	0.8
	1702	-0.6	-0.2		0859	3.0	0.9
					1704	-0.6	-0.2
6	0224	3.1	0.9	21	0053	3.3	1.0
W	1000	2.8*	0.9*	Th	0648	2.0	0.6
	1731	-0.3	-0.1		1042	2.4	0.7
					1743	0.1	0.0
7	0216	2.9	0.9	22	0104	3.4	1.0
Th	0648	2.5	0.8	F	0746	1.2	0.4
	0857	2.6	0.8		1245	2.0	0.6
	1759	0.2	0.1		1815	0.9	0.3
8	0202	2.7	0.8	23	0116	3.4	1.0
F	0733	2.1	0.6	Sa	0845	0.4	0.1
	1057	2.2	0.7		1521	1.9	0.6
	1824	0.7	0.2		1830	1.7	0.5
9	0146	2.7	0.8	24	0129	3.5	1.1
Sa	0824	1.5	0.5	Su	0938	-0.2	-0.1
	1302	1.9	0.6				
	1839	1.2	0.4				
10	0135	2.8	0.9	25	0137	3.6	1.1
Su	0906	0.8	0.2	M	1027	-0.7	-0.2
	1600	1.9	0.6				
	1813	1.8	0.5				
11	0129	3.1	0.9	26	0138	3.7	1.1
M	0949	0.1	0.0	Tu	1109	-1.1	-0.3
12	0133	3.4	1.0	27	0121	3.8	1.2
Tu	1035	-0.5	-0.2	W	1151	-1.3	-0.4
13	0141	3.8	1.2	28	0012	3.9	1.2
W	1124	-1.1	-0.3	Th	1233	-1.3	-0.4
14	0206	4.1	1.2	29	0000	4.0	1.2
Th	1213	-1.6	-0.5	F	1313	-1.3	-0.4
15	0245	4.3	1.3	30	0015	4.0	1.2
F	1304	-1.9	-0.6	Sa	1351	-1.2	-0.4
				31	0051	4.0	1.2
				Su	1430	-1.1	-0.3

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0116	3.8	1.2	16	0255	3.4	1.0
M	1503	-0.9	-0.3	Tu	0605	3.6	1.1
					1508	-1.2	-0.4
					2328	3.5	1.1
2	0127	3.6	1.1	17	0438	2.7	0.8
Tu	1535	-0.7	-0.2	W	0748	2.9	0.9
					1549	-0.5	-0.2
					2336	3.5	1.1
3	0121	3.4	1.0	18	0553	1.8	0.5
W	1600	-0.3	-0.1	Th	0948	2.2	0.7
					1624	0.3	0.1
					2346	3.6	1.1
4	0054	3.2	1.0	19	0649	0.9	0.3
Th	1621	0.2	0.1	F	1201	1.9	0.6
					1652	1.1	0.3
5	0036	3.1	0.9	20	0001	3.8	1.2
F	1642	0.7	0.2	Sa	0743	0.2	0.1
					1438	1.9	0.6
					1657	1.8	0.5
6	0021	3.1	0.9	21	0015	3.9	1.2
Sa	0738	1.3	0.4	Su	0829	-0.5	-0.2
	1203	1.7	0.5				
	1640	1.2	0.4				
7	0011	3.3	1.0	22	0027	4.0	1.2
Su	0806	0.6	0.2	M	0915	-0.9	-0.3
8	0011	3.6	1.1	23	0042	4.0	1.2
M	0842	-0.1	0.0	Tu	1001	-1.2	-0.4
9	0016	3.9	1.2	24	0039	4.1	1.2
Tu	0924	-0.8	-0.2	W	1043	-1.3	-0.4
10	0038	4.3	1.3	25	0033	4.1	1.2
W	1013	-1.4	-0.4	Th	1129	-1.3	-0.4
11	0106	4.6	1.4	26	0027	4.1	1.2
Th	1101	-1.9	-0.6	F	1207	-1.3	-0.4
12	0144	4.8	1.5	27	0029	4.1	1.2
F	1152	-2.2	-0.7	Sa	1248	-1.2	-0.4
13	0235	4.8	1.5	28	0045	4.1	1.2
Sa	1243	-2.2	-0.7	Su	1324	-1.1	-0.3
14	0333	4.6	1.4	29	0103	3.9	1.2
Su	1336	-2.1	-0.6	M	1357	-0.9	-0.3
15	0439	4.2	1.3	30	0102	3.7	1.1
M	1422	-1.8	-0.5	Tu	1424	-0.6	-0.2
	2341	3.6	1.1				

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
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SWEEPER COVE, ADAK ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0036	3.5	1.1	16	0426	1.7	0.5
W	1451	-0.2	-0.1	Th	0857	2.3	0.7
	2359	3.2	1.0		1516	0.5	0.2
					2227	3.5	1.1
2	1506	0.3	0.1	17	0528	0.8	0.2
Th	2328	3.1	0.9	F	1110	2.0	0.6
					1548	1.3	0.4
					2244	3.7	1.1
3	1521	0.8	0.2	18	0622	0.0	0.0
F	2307	3.2	1.0	Sa	1323	2.1	0.6
					1613	1.9	0.6
					2304	3.9	1.2
4	0640	1.3	0.4	19	0712	-0.5	-0.2
Sa	1103	1.6	0.5	Su	2324	4.0	1.2
	1520	1.3	0.4				
	2254	3.4	1.0				
5	0659	0.5	0.2	20	0757	-0.9	-0.3
Su	2255	3.7	1.1	M	2339	4.0	1.2
6	0731	-0.2	-0.1	21	0843	-1.1	-0.3
M	2309	4.1	1.2	Tu	2357	4.1	1.2
7	0809	-0.9	-0.3	22	0930	-1.2	-0.4
Tu	2334	4.5	1.4	W			
8	0855	-1.4	-0.4	23	0011	4.1	1.2
W				Th	1015	-1.2	-0.4
9	0010	4.9	1.5	24	0026	4.1	1.2
Th	0947	-1.9	-0.6	F	1100	-1.1	-0.3
10	0053	5.0	1.5	25	0039	4.0	1.2
F	1038	-2.1	-0.6	Sa	1143	-1.0	-0.3
11	0144	5.0	1.5	26	0054	3.9	1.2
Sa	1133	-2.1	-0.6	Su	1221	-0.8	-0.2
12	0239	4.7	1.4	27	0056	3.8	1.2
Su	1223	-1.9	-0.6	M	1253	-0.5	-0.2
13	0345	4.3	1.3	28	0048	3.5	1.1
M	1312	-1.5	-0.5	Tu	1318	-0.2	-0.1
	2245	3.3	1.0		2339	3.2	1.0
14	0046	3.2	1.0	29	1347	0.2	0.1
Tu	0504	3.6	1.1	W	2248	2.9	0.9
	1359	-0.9	-0.3				
	2211	3.3	1.0				
15	0309	2.5	0.8	30	0500	2.4*	0.7*
W	0654	2.9	0.9	Th	1405	0.6	0.2
	1441	-0.2	-0.1		2211	2.8	0.9
	2215	3.4	1.0				
				31	0503	1.8	0.5
				F	0751	1.9	0.6
					1420	1.1	0.3
					2143	2.9	0.9

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0506	1.2	0.4	16	0537	-0.6	-0.2
Sa	1044	1.8	0.5	Su	1355	2.7	0.8
	1418	1.6	0.5		1605	2.6	0.8
	2133	3.2	1.0		2203	3.7	1.1
2	0528	0.5	0.2	17	0627	-0.8	-0.2
Su	2138	3.6	1.1	M	2228	3.8	1.2
3	0606	-0.2	-0.1	18	0715	-0.9	-0.3
M	2156	4.0	1.2	Tu	2257	3.8	1.2
4	0648	-0.8	-0.2	19	0804	-0.9	-0.3
Tu	2228	4.4	1.3	W	2326	3.9	1.2
5	0734	-1.3	-0.4	20	0852	-0.9	-0.3
W	2307	4.7	1.4	Th	2354	3.8	1.2
6	0828	-1.6	-0.5	21	0939	-0.7	-0.2
Th	2357	4.9	1.5	F			
7	0921	-1.8	-0.5	22	0023	3.8	1.2
F				Sa	1021	-0.5	-0.2
8	0050	4.9	1.5	23	0048	3.6	1.1
Sa	1016	-1.7	-0.5	Su	1100	-0.3	-0.1
9	0149	4.6	1.4	24	0109	3.4	1.0
Su	1109	-1.4	-0.4	M	1139	0.0	0.0
					1900	2.5*	0.8*
10	0254	4.1	1.2	25	0124	3.0	0.9
M	1159	-1.0	-0.3	Tu	1215	0.4	0.1
					2151	2.7	0.8
11	0427	3.5	1.1	26	0700	2.2*	0.7*
Tu	1248	-0.4	-0.1	W	1236	0.8	0.2
	2033	2.8	0.9		2047	2.5	0.8
12	0122	2.1	0.6	27	0207	2.1	0.6
W	0617	2.9	0.9	Th	0605	2.2	0.7
	1334	0.3	0.1		1309	1.3	0.4
	2041	3.0	0.9		2009	2.5	0.8
13	0248	1.3	0.4	28	0242	1.5	0.5
Th	0823	2.5	0.8	F	0840	2.1	0.6
	1420	1.0	0.3		1327	1.8	0.5
	2054	3.2	1.0		1948	2.7	0.8
14	0355	0.6	0.2	29	0318	0.9	0.3
F	1022	2.4	0.7	Sa	1058	2.3	0.7
	1457	1.7	0.5		1324	2.2	0.7
	2113	3.4	1.0		1942	3.0	0.9
15	0448	-0.1	0.0	30	0355	0.2	0.1
Sa	1212	2.5	0.8	Su	1953	3.4	1.0
	1536	2.2	0.7				
	2138	3.6	1.1				
				31	0435	-0.3	-0.1
				M	2025	3.8	1.2

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0523	-0.8	-0.2	16	0626	-0.7	-0.2
Tu	2107	4.2	1.3	W	1500	3.2*	1.0*
					2209	3.6	1.1
2	0609	-1.2	-0.4	17	0714	-0.5	-0.2
W	2154	4.4	1.3	Th	2246	3.6	1.1
3	0703	-1.3	-0.4	18	0758	-0.3	-0.1
Th	2253	4.5	1.4	F	2328	3.5	1.1
4	0756	-1.3	-0.4	19	0843	0.0	0.0
F	2349	4.5	1.4	Sa	1800	2.8*	0.9*
5	0850	-1.1	-0.3	20	0017	3.3	1.0
Sa				Su	0922	0.3	0.1
					1700	2.5*	0.8*
6	0058	4.2	1.3	21	0106	3.0	0.9
Su	0942	-0.7	-0.2	M	0954	0.7	0.2
					1828	2.5	0.8
					2130	2.4	0.7
7	0217	3.7	1.1	22	0233	2.7	0.8
M	1035	-0.2	-0.1	Tu	1033	1.2	0.4
	1813	2.5	0.8		1754	2.4	0.7
	2207	2.2	0.7		2309	2.0	0.6
8	0353	3.2	1.0	23	0440	2.4	0.7
Tu	1124	0.5	0.2	W	1112	1.7	0.5
	1819	2.6	0.8		1729	2.4	0.7
	2357	1.5	0.5				
9	0553	2.8	0.9	24	0009	1.5	0.5
W	1220	1.2	0.4	Th	0718	2.4	0.7
	1834	2.8	0.9		1134	2.2	0.7
					1703	2.6	0.8
10	0113	0.8	0.2	25	0057	0.9	0.3
Th	0758	2.7	0.8	F	0949	2.7	0.8
	1315	1.8	0.5		1151	2.6	0.8
	1853	3.0	0.9		1650	2.9	0.9
11	0219	0.2	0.1	26	0139	0.4	0.1
F	0949	2.9	0.9	Sa	0900	2.8*	0.9*
	1410	2.4	0.7		1658	3.3	1.0
	1918	3.2	1.0				
12	0310	-0.3	-0.1	27	0222	-0.2	-0.1
Sa	1121	3.1	0.9	Su	1100	3.2*	1.0*
	1506	2.8	0.9		1730	3.6	1.1
	1950	3.3	1.0				
13	0403	-0.6	-0.2	28	0307	-0.6	-0.2
Su	1234	3.3	1.0	M	1200	3.4*	1.0*
	1603	3.0	0.9		1819	3.9	1.2
	2019	3.5	1.1				
14	0452	-0.8	-0.2	29	0356	-0.9	-0.3
M	1343	3.3	1.0	Tu	1922	4.1	1.2
	1642	3.2	1.0				
	2051	3.5	1.1				
15	0541	-0.8	-0.2	30	0445	-1.1	-0.3
Tu	1449	3.3	1.0	W	2026	4.2	1.3
	1709	3.2	1.0				
	2130	3.6	1.1				

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

SWEEPER COVE, ADAK ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0536	-1.1	-0.3	16	0613	0.0	0.0
Th	2135	4.2	1.3	F	1509	3.3	1.0
					1845	3.2	1.0
					2157	3.3	1.0
2	0625	-0.9	-0.3	17	0648	0.3	0.1
F	2241	4.0	1.2	Sa	1518	3.1	0.9
					1924	2.9	0.9
					2300	3.0	0.9
3	0715	-0.6	-0.2	18	0724	0.8	0.2
Sa	1534	2.9	0.9	Su	1516	3.0	0.9
	1827	2.8	0.9		2024	2.5	0.8
4	0000	3.7	1.1	19	0022	2.7	0.8
Su	0804	0.0	0.0	M	0752	1.3	0.4
	1537	2.9	0.9		1508	2.9	0.9
	2009	2.3	0.7		2127	2.0	0.6
5	0133	3.2	1.0	20	0223	2.5	0.8
M	0853	0.7	0.2	Tu	0800	1.8	0.5
	1545	2.9	0.9		1452	3.0	0.9
	2136	1.7	0.5		2209	1.5	0.5
6	0331	2.8	0.9	21	0520	2.4	0.7
Tu	0939	1.4	0.4	W	0809	2.3	0.7
	1600	3.0	0.9		1436	3.1	0.9
	2253	1.0	0.3		2254	0.9	0.3
7	0549	2.8	0.9	22	0800	2.9*	0.9*
W	1034	2.2	0.7	Th	1421	3.4	1.0
	1615	3.2	1.0		2335	0.4	0.1
	2358	0.3	0.1				
8	0806	3.1	0.9	23	1413	3.8	1.2
Th	1136	2.8	0.9	F			
	1630	3.4	1.0				
9	0053	-0.2	-0.1	24	0017	-0.2	-0.1
F	0949	3.5	1.1	Sa	1421	4.1	1.2
	1307	3.3	1.0				
	1648	3.5	1.1				
10	0143	-0.6	-0.2	25	0100	-0.6	-0.2
Sa	1054	3.8	1.2	Su	1500	4.3	1.3
	1900	3.3*	1.0*				
11	0232	-0.8	-0.2	26	0149	-1.0	-0.3
Su	1147	3.9	1.2	M	1551	4.5	1.4
	1900	3.5*	1.1*				
12	0320	-0.8	-0.2	27	0237	-1.2	-0.4
M	1239	4.0	1.2	Tu	1100	4.0*	1.2*
	2000	3.5*	1.1*		1709	4.5	1.4
13	0405	-0.7	-0.2	28	0327	-1.2	-0.4
Tu	1321	3.9	1.2	W	1200	4.0*	1.2*
	2100	3.4*	1.0*		1838	4.4	1.3
14	0448	-0.6	-0.2	29	0415	-1.1	-0.3
W	1406	3.7	1.1	Th	1351	3.9	1.2
	2200	3.3*	1.0*		1555	3.8	1.2
					1957	4.1	1.2
15	0531	-0.4	-0.1	30	0501	-0.7	-0.2
Th	1442	3.5	1.1	F	1339	3.7	1.1
	1815	3.3	1.0		1729	3.4	1.0
	2051	3.4	1.0		2123	3.7	1.1
				31	0547	-0.2	-0.1
				Sa	1339	3.6	1.1
					1847	2.8	0.9
					2300	3.2	1.0

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0627	0.5	0.2	16	0547	1.5	0.5
Su	1348	3.6	1.1	M	1319	3.6	1.1
	1957	2.0	0.6		2043	1.9	0.6
2	0056	2.8	0.9	17	0145	2.3	0.7
M	0705	1.3	0.4	Tu	0542	2.1	0.6
	1400	3.7	1.1		1307	3.7	1.1
	2103	1.3	0.4		2115	1.2	0.4
3	0318	2.6	0.8	18	1301	4.0	1.2
Tu	0730	2.1	0.6	W	2146	0.6	0.2
	1412	3.8	1.2				
	2201	0.5	0.2				
4	1423	4.0	1.2	19	1259	4.3	1.3
W	2254	-0.1	0.0	Th	2225	0.0	0.0
5	1427	4.1	1.2	20	1306	4.6	1.4
Th	2343	-0.5	-0.2	F	2307	-0.5	-0.2
6	0800	3.8*	1.2*	21	1325	4.9	1.5
F	1418	4.2	1.3	Sa	2349	-0.9	-0.3
7	0032	-0.8	-0.2	22	1357	5.1	1.6
Sa	1105	4.4	1.3	Su			
8	0117	-0.9	-0.3	23	0038	-1.2	-0.4
Su	1130	4.6	1.4	M	1439	5.2	1.6
9	0201	-0.9	-0.3	24	0126	-1.4	-0.4
M	1202	4.6	1.4	Tu	1531	5.0	1.5
10	0241	-0.7	-0.2	25	0212	-1.3	-0.4
Tu	1237	4.5	1.4	W	1637	4.7	1.4
11	0324	-0.6	-0.2	26	0301	-1.1	-0.3
W	1309	4.3	1.3	Th	1234	4.4	1.3
					1548	4.2	1.3
					1812	4.3	1.3
12	0400	-0.3	-0.1	27	0344	-0.6	-0.2
Th	1333	4.1	1.2	F	1218	4.2	1.3
					1719	3.5	1.1
					1959	3.6	1.1
13	0435	0.1	0.0	28	0423	0.1	0.0
F	1337	3.9	1.2	Sa	1219	4.2	1.3
					1826	2.7	0.8
					2159	3.0	0.9
14	0503	0.5	0.2	29	0459	0.8	0.2
Sa	1337	3.7	1.1	Su	1227	4.2	1.3
					1927	1.8	0.5
15	0532	1.0	0.3	30	0015	2.6	0.8
Su	1328	3.6	1.1	M	0527	1.7	0.5
	2020	2.4	0.7		1239	4.4	1.3
	2304	2.5	0.8		2018	1.0	0.3

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0302	2.5	0.8	16	1148	4.4	1.3
Tu	0538	2.4	0.7	W	2039	0.5	0.2
	1251	4.5	1.4				
	2108	0.2	0.1				
2	1303	4.7	1.4	17	1156	4.8	1.5
W	2157	-0.3	-0.1	Th	2118	-0.1	0.0
3	1311	4.8	1.5	18	1214	5.1	1.6
Th	2239	-0.7	-0.2	F	2153	-0.7	-0.2
4	1308	4.8	1.5	19	1239	5.4	1.6
F	2326	-0.9	-0.3	Sa	2242	-1.1	-0.3
5	1237	4.9	1.5	20	1316	5.6	1.7
Sa				Su	2327	-1.4	-0.4
6	0010	-0.9	-0.3	21	1354	5.6	1.7
Su	1150	4.9	1.5	M			
7	0051	-0.9	-0.3	22	0016	-1.5	-0.5
M	1202	4.9	1.5	Tu	1450	5.4	1.6
8	0131	-0.7	-0.2	23	0106	-1.4	-0.4
Tu	1217	4.9	1.5	W	1542	5.0	1.5
9	0210	-0.5	-0.2	24	0151	-1.1	-0.3
W	1238	4.7	1.4	Th	1145	4.4	1.3
					1424	4.3	1.3
					1705	4.4	1.3
10	0242	-0.3	-0.1	25	0233	-0.5	-0.2
Th	1246	4.5	1.4	F	1108	4.2	1.3
					1618	3.5	1.1
					1851	3.6	1.1
11	0314	0.1	0.0	26	0315	0.2	0.1
F	1240	4.3	1.3	Sa	1105	4.3	1.3
					1730	2.6	0.8
					2108	2.9	0.9
12	0339	0.5	0.2	27	0347	1.0	0.3
Sa	1228	4.1	1.2	Su	1113	4.4	1.3
					1826	1.6	0.5
					2331	2.5	0.8
13	0354	1.0	0.3	28	0412	1.8	0.5
Su	1214	4.0	1.2	M	1127	4.6	1.4
					1915	0.7	0.2
14	0409	1.5	0.5	29	1141	4.8	1.5
M	1200	4.0	1.2	Tu	2000	0.0	0.0
	1949	1.8	0.5				
15	0031	2.2	0.7	30	1200	4.9	1.5
Tu	0353	2.1	0.6	W	2049	-0.5	-0.2
	1153	4.2	1.3				
	2007	1.2	0.4				
				31	1218	5.0	1.5
				Th	2137	-0.8	-0.2

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0024	-1.1	-0.3	16	0055	-0.2	-0.1
Th	1611	4.6	1.4	F	1030	3.9	1.2
					1800	3.4*	1.0*
2	0110	-0.9	-0.3	17	0127	0.0	0.0
F	1001	4.0	1.2	Sa	1024	3.8	1.2
	1308	3.7	1.1		1800	3.3*	1.0*
	1723	4.2	1.3				
3	0154	-0.6	-0.2	18	0156	0.2	0.1
Sa	1003	3.9	1.2	Su	1022	3.7	1.1
	1441	3.2	1.0				
	1842	3.7	1.1				
4	0236	-0.1	0.0	19	0221	0.5	0.2
Su	1017	4.0	1.2	M	1021	3.6	1.1
	1600	2.6	0.8		1616	2.6	0.8
	2015	3.2	1.0		1926	2.8	0.9
5	0318	0.5	0.2	20	0242	0.9	0.3
M	1034	4.1	1.2	Tu	1015	3.6	1.1
	1703	2.0	0.6		1651	2.1	0.6
	2149	2.8	0.9		2104	2.5	0.8
6	0351	1.2	0.4	21	0301	1.4	0.4
Tu	1056	4.2	1.3	W	1013	3.7	1.1
	1805	1.3	0.4		1719	1.5	0.5
	2338	2.5	0.8		2251	2.4	0.7
7	0419	1.8	0.5	22	0312	1.9	0.6
W	1117	4.3	1.3	Th	1014	3.9	1.2
	1856	0.8	0.2		1801	0.9	0.3
8	0143	2.5	0.8	23	1025	4.1	1.2
Th	0440	2.4	0.7	F	1847	0.3	0.1
	1143	4.3	1.3				
	1949	0.4	0.1				
9	1204	4.3	1.3	24	1047	4.4	1.3
F	2041	0.1	0.0	Sa	1936	-0.2	-0.1
10	1229	4.3	1.3	25	1118	4.6	1.4
Sa	2127	-0.1	0.0	Su	2031	-0.6	-0.2
11	1248	4.2	1.3	26	1200	4.8	1.5
Su	2213	-0.2	-0.1	M	2129	-0.9	-0.3
12	1310	4.2	1.3	27	1255	4.8	1.5
M	2259	-0.3	-0.1	Tu	2223	-1.0	-0.3
13	0700	3.6*	1.1*	28	1357	4.6	1.4
Tu	1332	4.1	1.2	W	2317	-0.9	-0.3
	2342	-0.3	-0.1				
14	0700	3.5*	1.1*	29	1506	4.3	1.3
W	1347	4.0	1.2	Th			
15	0020	-0.3	-0.1	30	0008	-0.8	-0.2
Th	1033	4.0	1.2	F	0845	3.5	1.1
	1700	3.7*	1.1*		1137	3.3	1.0
					1636	3.9	1.2
				31	0053	-0.4	-0.1
				Sa	0845	3.5	1.1
					1317	2.8	0.9
					1802	3.5	1.1

FEBRUARY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0135	0.0	0.0	16	0127	0.6	0.2
Su	0854	3.6	1.1	M	0847	3.0	0.9
	1433	2.1	0.6		1434	1.9	0.6
	1928	3.1	0.9		1922	2.6	0.8
2	0215	0.6	0.2	17	0152	1.0	0.3
M	0912	3.7	1.1	Tu	0845	3.1	0.9
	1532	1.5	0.5		1509	1.4	0.4
	2057	2.8	0.9		2046	2.4	0.7
3	0253	1.1	0.3	18	0218	1.4	0.4
Tu	0935	3.8	1.2	W	0844	3.2	1.0
	1631	1.0	0.3		1545	0.9	0.3
	2226	2.6	0.8		2210	2.4	0.7
4	0322	1.7	0.5	19	0235	1.9	0.6
W	0957	3.9	1.2	Th	0850	3.4	1.0
	1719	0.5	0.2		1627	0.3	0.1
					2347	2.4	0.7
5	0002	2.5	0.8	20	0240	2.2	0.7
Th	0354	2.1	0.6	F	0908	3.6	1.1
	1022	3.9	1.2		1712	-0.1	0.0
	1811	0.2	0.1				
6	0148	2.6	0.8	21	0930	3.9	1.2
F	0405	2.5	0.8	Sa	1804	-0.5	-0.2
	1047	3.9	1.2				
	1903	0.0	0.0				
7	1112	3.9	1.2	22	1008	4.1	1.2
Sa	1956	-0.1	0.0	Su	1903	-0.7	-0.2
8	1141	3.9	1.2	23	1048	4.2	1.3
Su	2048	-0.2	-0.1	M	2002	-0.8	-0.2
9	1206	3.8	1.2	24	1147	4.2	1.3
M	2141	-0.2	-0.1	Tu	2104	-0.9	-0.3
10	1241	3.8	1.2	25	1256	4.0	1.2
Tu	2230	-0.3	-0.1	W	2201	-0.7	-0.2
11	0700	3.2*	1.0*	26	1419	3.7	1.1
W	1323	3.6	1.1	Th	2257	-0.5	-0.2
	2312	-0.2	-0.1				
12	0700	3.1*	0.9*	27	0706	2.8	0.9
Th	1412	3.5	1.1	F	1033	2.5	0.8
	2354	-0.2	-0.1		1552	3.3	1.0
					2346	-0.2	-0.1
13	0906	3.2	1.0	28	0707	2.8	0.9
F	1220	3.1	0.9	Sa	1205	1.9	0.6
	1521	3.2	1.0		1725	3.0	0.9
14	0030	0.0	0.0				
Sa	0900	3.2	1.0				
	1320	2.8	0.9				
	1641	3.0	0.9				
15	0102	0.2	0.1				
Su	0854	3.1	0.9				
	1406	2.4	0.7				
	1800	2.8	0.9				

MARCH

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0032	0.3	0.1	16	0026	0.8	0.2
Su	0723	2.9	0.9	M	0655	2.5	0.8
	1311	1.3	0.4		1303	1.0	0.3
	1854	2.8	0.9		1913	2.4	0.7
2	0115	0.7	0.2	17	0101	1.2	0.4
M	0739	3.1	0.9	Tu	0656	2.5	0.8
	1407	0.8	0.2		1341	0.5	0.2
	2017	2.7	0.8		2031	2.4	0.7
3	0155	1.2	0.4	18	0130	1.6	0.5
Tu	0804	3.2	1.0	W	0701	2.7	0.8
	1456	0.3	0.1		1420	0.0	0.0
	2135	2.6	0.8		2140	2.5	0.8
4	0230	1.6	0.5	19	0151	2.0	0.6
W	0826	3.3	1.0	Th	0712	3.0	0.9
	1545	-0.1	0.0		1501	-0.4	-0.1
	2248	2.6	0.8		2255	2.5	0.8
5	0309	2.0	0.6	20	0206	2.3	0.7
Th	0851	3.3	1.0	F	0734	3.2	1.0
	1633	-0.3	-0.1		1547	-0.8	-0.2
6	0007	2.6	0.8	21	0806	3.5	1.1
F	0341	2.2	0.7	Sa	1636	-1.0	-0.3
	0920	3.3	1.0				
	1719	-0.4	-0.1				
7	0133	2.5	0.8	22	0848	3.6	1.1
Sa	0403	2.4	0.7	Su	1732	-1.0	-0.3
	0948	3.3	1.0				
	1811	-0.4	-0.1				
8	1023	3.3	1.0	23	0937	3.6	1.1
Su	1905	-0.3	-0.1	M	1830	-1.0	-0.3
9	1049	3.3	1.0	24	1036	3.5	1.1
M	2000	-0.3	-0.1	Tu	1931	-0.8	-0.2
10	1131	3.2	1.0	25	1152	3.2	1.0
Tu	2055	-0.2	-0.1	W	2030	-0.5	-0.2
11	0500	2.5*	0.8*	26	0446	2.3	0.7
W	1226	3.0	0.9	Th	0803	2.2	0.7
	2148	-0.1	0.0		1325	2.9	0.9
					2129	-0.1	0.0
12	0500	2.4*	0.7*	27	0454	2.4	0.7
Th	1335	2.8	0.9	F	0948	1.7	0.5
	2233	0.0	0.0		1511	2.6	0.8
					2224	0.3	0.1
13	0704	2.5	0.8	28	0513	2.5	0.8
F	1039	2.4	0.7	Sa	1101	1.1	0.3
	1455	2.6	0.8		1656	2.5	0.8
	2313	0.2	0.1		2317	0.7	0.2
14	0702	2.5	0.8	29	0533	2.6	0.8
Sa	1142	2.0	0.6	Su	1202	0.5	0.2
	1627	2.5	0.8		1829	2.5	0.8
	2352	0.5	0.2				
15	0656	2.4	0.7	30	0009	1.2	0.4
Su	1227	1.5	0.5	M	0557	2.7	0.8
	1753	2.4	0.7		1251	0.0	0.0
					1949	2.6	0.8
				31	0054	1.5	0.5
				Tu	0623	2.8	0.9
					1337	-0.4	-0.1
					2058	2.7	0.8

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0144	1.9	0.6	16	0057	2.4	0.7
W	0645	2.8	0.9	Th	0524	3.0	0.9
	1420	-0.7	-0.2		1347	-1.1	-0.3
	2203	2.7	0.8		2219	2.8	0.9
2	0230	2.1	0.6	17	0112	2.7	0.8
Th	0713	2.9	0.9	F	0556	3.2	1.0
	1505	-0.8	-0.2		1430	-1.4	-0.4
	2303	2.7	0.8		2324	2.8	0.9
3	0305	2.3	0.7	18	0144	2.7	0.8
F	0741	2.9	0.9	Sa	0635	3.4	1.0
	1548	-0.8	-0.2		1519	-1.4	-0.4
4	0002	2.7	0.8	19	0724	3.4	1.0
Sa	0339	2.4	0.7	Su	1609	-1.4	-0.4
	0807	2.9	0.9				
	1630	-0.7	-0.2				
5	0111	2.6	0.8	20	0823	3.3	1.0
Su	0404	2.5	0.8	M	1702	-1.1	-0.3
	0842	2.9	0.9				
	1720	-0.6	-0.2				
6	0227	2.5	0.8	21	0137	2.6	0.8
M	0430	2.4	0.7	Tu	0422	2.5	0.8
	0920	2.8	0.9		0929	3.1	0.9
	1810	-0.4	-0.1		1756	-0.8	-0.2
7	0100	2.2*	0.7*	22	0208	2.5	0.8
Tu	1003	2.7	0.8	W	0603	2.2	0.7
	1900	-0.2	-0.1		1048	2.7	0.8
					1848	-0.3	-0.1
8	0412	2.4	0.7	23	0228	2.5	0.8
W	0633	2.3	0.7	Th	0745	1.7	0.5
	1058	2.5	0.8		1231	2.3	0.7
	1953	0.0	0.0		1941	0.2	0.1
9	0423	2.3	0.7	24	0252	2.6	0.8
Th	0815	2.1	0.6	F	0905	1.1	0.3
	1217	2.3	0.7		1434	2.1	0.6
	2039	0.2	0.1		2036	0.8	0.2
10	0431	2.2	0.7	25	0317	2.6	0.8
F	0932	1.8	0.5	Sa	1006	0.5	0.2
	1400	2.1	0.6		1633	2.1	0.6
	2128	0.6	0.2		2135	1.3	0.4
11	0435	2.2	0.7	26	0340	2.7	0.8
Sa	1024	1.3	0.4	Su	1100	-0.1	0.0
	1557	2.0	0.6		1813	2.3	0.7
	2212	0.9	0.3		2241	1.8	0.5
12	0441	2.2	0.7	27	0406	2.8	0.9
Su	1106	0.8	0.2	M	1148	-0.5	-0.2
	1735	2.1	0.6		1932	2.6	0.8
	2254	1.3	0.4		2344	2.1	0.6
13	0443	2.3	0.7	28	0431	2.9	0.9
M	1145	0.3	0.1	Tu	1227	-0.8	-0.2
	1858	2.3	0.7		2038	2.8	0.9
	2336	1.7	0.5				
14	0451	2.5	0.8	29	0044	2.4	0.7
Tu	1224	-0.3	-0.1	W	0459	2.9	0.9
	2011	2.5	0.8		1309	-1.0	-0.3
					2130	3.0	0.9
15	0022	2.1	0.6	30	0141	2.6	0.8
W	0502	2.7	0.8	Th	0521	2.9	0.9
	1305	-0.7	-0.2		1348	-1.1	-0.3
	2120	2.7	0.8		2222	3.0	0.9

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0233	2.7	0.8	16	0507	3.7	1.1
F	0547	2.9	0.9	Sa	1407	-1.7	-0.5
	1429	-1.0	-0.3		2200	3.1*	0.9*
	2316	3.0	0.9				
2	0313	2.7	0.8	17	0604	3.6	1.1
Sa	0618	2.8	0.9	Su	1457	-1.5	-0.5
	1510	-0.9	-0.3		2351	3.1	0.9
3	0000	2.9	0.9	18	0243	2.9	0.9
Su	0354	2.7	0.8	M	0705	3.4	1.0
	0651	2.8	0.9		1545	-1.2	-0.4
	1550	-0.8	-0.2				
4	0045	2.8	0.9	19	0009	3.0	0.9
M	0433	2.6	0.8	Tu	0404	2.6	0.8
	0729	2.7	0.8		0818	3.1	0.9
	1630	-0.6	-0.2		1632	-0.8	-0.2
5	0124	2.7	0.8	20	0027	3.0	0.9
Tu	0526	2.5	0.8	W	0535	2.2	0.7
	0811	2.6	0.8		0940	2.6	0.8
	1712	-0.3	-0.1		1717	-0.2	-0.1
6	0149	2.7	0.8	21	0050	3.0	0.9
W	0633	2.3	0.7	Th	0655	1.6	0.5
	0906	2.4	0.7		1130	2.1	0.6
	1751	0.0	0.0		1800	0.5	0.2
7	0207	2.6	0.8	22	0111	3.1	0.9
Th	0742	2.0	0.6	F	0803	0.9	0.3
	1036	2.1	0.6		1338	1.9	0.6
	1833	0.4	0.1		1842	1.1	0.3
8	0215	2.5	0.8	23	0136	3.2	1.0
F	0835	1.6	0.5	Sa	0906	0.3	0.1
	1239	1.8	0.5		1555	2.0	0.6
	1912	0.8	0.2		1928	1.7	0.5
9	0223	2.5	0.8	24	0200	3.3	1.0
Sa	0917	1.1	0.3	Su	0955	-0.3	-0.1
	1457	1.8	0.5		1805	2.3	0.7
	1948	1.3	0.4		2022	2.2	0.7
10	0225	2.6	0.8	25	0225	3.3	1.0
Su	0954	0.5	0.2	M	1041	-0.7	-0.2
	1710	2.0	0.6		1929	2.7	0.8
	2029	1.8	0.5		2139	2.6	0.8
11	0233	2.7	0.8	26	0250	3.3	1.0
M	1031	-0.1	0.0	Tu	1126	-0.9	-0.3
	1855	2.4	0.7		2028	3.0	0.9
	2114	2.3	0.7		2304	2.9	0.9
12	0242	2.9	0.9	27	0312	3.3	1.0
Tu	1112	-0.6	-0.2	W	1205	-1.1	-0.3
	1900	2.7*	0.8*		2113	3.2	1.0
13	0300	3.2	1.0	28	0030	3.1	0.9
W	1151	-1.1	-0.3	Th	0333	3.2	1.0
	2000	2.9*	0.9*		1247	-1.1	-0.3
					2202	3.3	1.0
14	0332	3.4	1.0	29	0145	3.1	0.9
Th	1237	-1.5	-0.5	F	0351	3.2	1.0
	2100	3.1*	0.9*		1325	-1.1	-0.3
					2244	3.4	1.0
15	0418	3.6	1.1	30	0600	3.0*	0.9*
F	1321	-1.7	-0.5	Sa	1403	-1.0	-0.3
	2200	3.2*	1.0*		2316	3.3	1.0
				31	0700	2.9*	0.9*
				Su	1440	-0.8	-0.2
					2351	3.3	1.0

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0700	2.9*	0.9*	16	0309	2.7	0.8
M	1512	-0.6	-0.2	Tu	0717	3.2	1.0
					1521	-0.7	-0.2
					2307	3.3	1.0
2	0014	3.2	1.0	17	0428	2.2	0.7
Tu	0800	2.7*	0.8*	W	0843	2.7	0.8
	1548	-0.3	-0.1		1600	-0.1	0.0
					2325	3.4	1.0
3	0025	3.1	0.9	18	0544	1.5	0.5
W	1616	0.0	0.0	Th	1022	2.3	0.7
					1639	0.6	0.2
					2346	3.5	1.1
4	0033	3.0	0.9	19	0649	0.9	0.3
Th	1648	0.4	0.1	F	1223	2.0	0.6
					1711	1.2	0.4
5	0037	3.0	0.9	20	0009	3.6	1.1
F	0727	1.6	0.5	Sa	0749	0.2	0.1
	1055	1.8	0.5		1441	2.0	0.6
	1707	0.9	0.3		1738	1.9	0.6
6	0036	3.0	0.9	21	0035	3.7	1.1
Sa	0805	1.1	0.3	Su	0841	-0.2	-0.1
	1329	1.7	0.5				
	1721	1.5	0.5				
7	0041	3.1	0.9	22	0057	3.7	1.1
Su	0837	0.5	0.2	M	0930	-0.6	-0.2
8	0049	3.3	1.0	23	0123	3.7	1.1
M	0916	-0.1	0.0	Tu	1017	-0.8	-0.2
9	0100	3.5	1.1	24	0148	3.6	1.1
Tu	0955	-0.6	-0.2	W	1103	-0.9	-0.3
					1900	3.1*	0.9*
10	0122	3.8	1.2	25	0212	3.5	1.1
W	1040	-1.1	-0.3	Th	1146	-1.0	-0.3
					1900	3.0*	0.9*
11	0158	4.0	1.2	26	0230	3.5	1.1
Th	1129	-1.5	-0.5	F	1227	-0.9	-0.3
					2213	3.5	1.1
12	0250	4.1	1.2	27	0500	3.2*	1.0*
F	1217	-1.7	-0.5	Sa	1305	-0.9	-0.3
					2241	3.5	1.1
13	0346	4.1	1.2	28	0600	3.0*	0.9*
Sa	1304	-1.7	-0.5	Su	1340	-0.7	-0.2
	2200	3.4*	1.0*		2259	3.4	1.0
14	0448	3.9	1.2	29	0600	3.0*	0.9*
Su	1353	-1.5	-0.5	M	1412	-0.5	-0.2
	2247	3.3	1.0		2311	3.3	1.0
15	0137	3.2	1.0	30	0700	2.8*	0.9*
M	0557	3.7	1.1	Tu	1443	-0.3	-0.1
	1439	-1.2	-0.4		2315	3.2	1.0
	2252	3.3	1.0				

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1510	0.1	0.0	16	0418	1.3	0.4
W	2316	3.2	1.0	Th	0928	2.5	0.8
					1530	0.7	0.2
					2225	3.5	1.1
2	0530	2.2	0.7	17	0518	0.7	0.2
Th	0800	2.3	0.7	F	1107	2.2	0.7
	1531	0.5	0.2		1606	1.3	0.4
	2315	3.1	0.9		2250	3.7	1.1
3	0556	1.7	0.5	18	0617	0.2	0.1
F	0947	2.0	0.6	Sa	1300	2.1	0.6
	1552	1.0	0.3		1631	1.8	0.5
	2313	3.2	1.0		2312	3.7	1.1
4	0630	1.2	0.4	19	0710	-0.2	-0.1
Sa	1148	1.8	0.5	Su	2342	3.8	1.2
	1600	1.5	0.5				
	2317	3.3	1.0				
5	0706	0.6	0.2	20	0807	-0.5	-0.2
Su	2325	3.5	1.1	M			
6	0748	0.0	0.0	21	0011	3.7	1.1
M	2340	3.8	1.2	Tu	0900	-0.6	-0.2
7	0837	-0.5	-0.2	22	0041	3.7	1.1
Tu				W	0950	-0.7	-0.2
8	0005	4.0	1.2	23	0110	3.6	1.1
W	0926	-1.0	-0.3	Th	1041	-0.7	-0.2
					1900	3.0*	0.9*
9	0044	4.2	1.3	24	0143	3.5	1.1
Th	1018	-1.3	-0.4	F	1127	-0.7	-0.2
					1900	2.9*	0.9*
10	0136	4.3	1.3	25	0221	3.4	1.0
F	1109	-1.5	-0.5	Sa	1210	-0.7	-0.2
					2148	3.2	1.0
11	0238	4.3	1.3	26	0034	3.1	0.9
Sa	1200	-1.5	-0.5	Su	0300	3.2	1.0
					1249	-0.5	-0.2
					2200	3.2	1.0
12	0347	4.1	1.2	27	0600	2.8*	0.9*
Su	1250	-1.3	-0.4	M	1321	-0.4	-0.1
	2146	3.2	1.0		2157	3.1	0.9
13	0006	3.1	0.9	28	0241	2.7	0.8
M	0503	3.7	1.1	Tu	0512	2.8	0.9
	1334	-1.0	-0.3		1349	-0.1	0.0
	2138	3.2	1.0		2158	3.0	0.9
14	0151	2.6	0.8	29	0313	2.4	0.7
Tu	0629	3.3	1.0	W	0621	2.5	0.8
	1416	-0.5	-0.2		1415	0.2	0.1
	2146	3.2	1.0		2154	3.0	0.9
15	0307	2.0	0.6	30	0345	1.9	0.6
W	0755	2.9	0.9	Th	0743	2.3	0.7
	1455	0.0	0.0		1436	0.6	0.2
	2203	3.4	1.0		2152	2.9	0.9
				31	0421	1.5	0.5
				F	0907	2.1	0.6
					1501	1.1	0.3
					2151	3.0	0.9

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0449	1.0	0.3	16	0535	-0.4	-0.1
Sa	1044	2.0	0.6	Su	1312	2.4	0.7
	1513	1.5	0.5		1615	2.1	0.6
	2153	3.2	1.0		2219	3.5	1.1
2	0528	0.4	0.1	17	0626	-0.5	-0.2
Su	1233	2.0	0.6	M	2255	3.4	1.0
	1504	1.9	0.6				
	2201	3.4	1.0				
3	0613	0.0	0.0	18	0726	-0.5	-0.2
M	2223	3.7	1.1	Tu	2328	3.4	1.0
4	0705	-0.5	-0.2	19	0820	-0.5	-0.2
Tu	2251	3.9	1.2	W			
5	0801	-0.8	-0.2	20	0003	3.3	1.0
W	2334	4.1	1.2	Th	0917	-0.5	-0.2
					1800	2.7*	0.8*
6	0857	-1.0	-0.3	21	0042	3.2	1.0
Th				F	1010	-0.4	-0.1
					1800	2.6*	0.8*
7	0029	4.1	1.2	22	0141	3.1	0.9
F	0954	-1.2	-0.4	Sa	1059	-0.4	-0.1
					2024	2.8	0.9
					2242	2.7	0.8
8	0134	4.1	1.2	23	0236	2.9	0.9
Sa	1050	-1.2	-0.4	Su	1141	-0.2	-0.1
					2018	2.7	0.8
9	0250	3.8	1.2	24	0001	2.5	0.8
Su	1143	-1.0	-0.3	M	0352	2.7	0.8
	2020	2.8	0.9		1220	0.0	0.0
	2249	2.7	0.8		2019	2.6	0.8
10	0416	3.5	1.1	25	0059	2.2	0.7
M	1230	-0.7	-0.2	Tu	0509	2.5	0.8
	2009	2.8	0.9		1249	0.2	0.1
					2020	2.6	0.8
11	0030	2.1	0.6	26	0138	1.8	0.5
Tu	0545	3.2	1.0	W	0624	2.4	0.7
	1315	-0.2	-0.1		1324	0.6	0.2
	2020	2.9	0.9		2016	2.6	0.8
12	0146	1.5	0.5	27	0211	1.4	0.4
W	0715	2.8	0.9	Th	0738	2.3	0.7
	1354	0.3	0.1		1352	0.9	0.3
	2036	3.1	0.9		2017	2.6	0.8
13	0251	0.9	0.3	28	0243	0.9	0.3
Th	0842	2.6	0.8	F	0849	2.3	0.7
	1433	0.8	0.2		1418	1.3	0.4
	2057	3.2	1.0		2018	2.7	0.8
14	0347	0.3	0.1	29	0318	0.5	0.2
F	1008	2.4	0.7	Sa	1004	2.3	0.7
	1512	1.4	0.4		1436	1.7	0.5
	2123	3.4	1.0		2022	2.9	0.9
15	0443	-0.1	0.0	30	0357	0.0	0.0
Sa	1139	2.4	0.7	Su	1127	2.3	0.7
	1545	1.8	0.5		1447	2.1	0.6
	2150	3.5	1.1		2034	3.1	0.9
				31	0439	-0.3	-0.1
				M	2058	3.4	1.0

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0528	-0.6	-0.2	16	0635	-0.4	-0.1
Tu	2134	3.6	1.1	W	1500	2.5*	0.8*
					2245	3.0	0.9
2	0626	-0.8	-0.2	17	0731	-0.3	-0.1
W	2218	3.7	1.1	Th	1500	2.4*	0.7*
					2324	2.9	0.9
3	0726	-0.9	-0.3	18	0829	-0.1	0.0
Th	2317	3.7	1.1	F	1736	2.5	0.8
					1957	2.4	0.7
4	0826	-0.9	-0.3	19	0033	2.7	0.8
F				Sa	0921	0.0	0.0
					1755	2.5	0.8
					2138	2.3	0.7
5	0026	3.6	1.1	20	0153	2.5	0.8
Sa	0926	-0.7	-0.2	Su	1010	0.3	0.1
					1803	2.4	0.7
					2253	2.0	0.6
6	0153	3.3	1.0	21	0325	2.4	0.7
Su	1023	-0.5	-0.2	M	1100	0.5	0.2
	1815	2.4	0.7		1810	2.4	0.7
	2156	2.1	0.6		2335	1.6	0.5
7	0332	3.0	0.9	22	0455	2.3	0.7
M	1112	-0.1	0.0	Tu	1142	0.8	0.2
	1819	2.4	0.7		1814	2.4	0.7
	2326	1.5	0.5				
8	0512	2.8	0.9	23	0018	1.2	0.4
Tu	1208	0.4	0.1	W	0614	2.3	0.7
	1835	2.6	0.8		1219	1.2	0.4
					1818	2.4	0.7
9	0030	0.9	0.3	24	0050	0.8	0.2
W	0643	2.7	0.8	Th	0728	2.4	0.7
	1251	0.8	0.2		1251	1.5	0.5
	1856	2.8	0.9		1819	2.5	0.8
10	0130	0.3	0.1	25	0121	0.3	0.1
Th	0805	2.7	0.8	F	0835	2.6	0.8
	1335	1.3	0.4		1330	1.9	0.6
	1920	2.9	0.9		1823	2.6	0.8
11	0219	-0.2	-0.1	26	0157	-0.1	0.0
F	0922	2.7	0.8	Sa	0940	2.7	0.8
	1417	1.7	0.5		1348	2.2	0.7
	1948	3.1	0.9		1838	2.8	0.9
12	0311	-0.5	-0.2	27	0236	-0.5	-0.2
Sa	1031	2.7	0.8	Su	1046	2.8	0.9
	1503	2.0	0.6		1410	2.5	0.8
	2017	3.1	0.9		1856	3.1	0.9
13	0359	-0.7	-0.2	28	0317	-0.7	-0.2
Su	1144	2.7	0.8	M	1154	2.8	0.9
	1542	2.2	0.7		1419	2.7	0.8
	2049	3.2	1.0		1927	3.3	1.0
14	0448	-0.7	-0.2	29	0403	-0.9	-0.3
M	1259	2.6	0.8	Tu	2008	3.5	1.1
	1620	2.4	0.7				
	2125	3.1	0.9				
15	0541	-0.6	-0.2	30	0452	-0.9	-0.3
Tu	1412	2.6	0.8	W	2058	3.5	1.1
	1655	2.5	0.8				
	2203	3.1	0.9				

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

MASSACRE BAY, ATTU ISLAND, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0549	-0.8	-0.2	16	0629	0.1	0.0
Th	2200	3.4	1.0	F	1459	2.8	0.9
					1938	2.4	0.7
					2248	2.6	0.8
2	0648	-0.6	-0.2	17	0719	0.4	0.1
F	2315	3.2	1.0	Sa	1525	2.7	0.8
					2053	2.1	0.6
3	0746	-0.2	-0.1	18	0031	2.3	0.7
Sa	1548	2.5	0.8	Su	0808	0.8	0.2
	1939	2.2	0.7		1539	2.7	0.8
					2143	1.8	0.5
4	0055	2.8	0.9	19	0229	2.2	0.7
Su	0845	0.2	0.1	M	0857	1.2	0.4
	1601	2.5	0.8		1551	2.6	0.8
	2116	1.6	0.5		2225	1.3	0.4
5	0248	2.6	0.8	20	0425	2.2	0.7
M	0941	0.7	0.2	Tu	0943	1.6	0.5
	1618	2.6	0.8		1556	2.7	0.8
	2231	1.0	0.3		2257	0.9	0.3
6	0441	2.6	0.8	21	0559	2.4	0.7
Tu	1041	1.2	0.4	W	1036	2.0	0.6
	1641	2.7	0.8		1602	2.8	0.9
	2327	0.4	0.1		2332	0.4	0.1
7	0620	2.7	0.8	22	0719	2.7	0.8
W	1136	1.7	0.5	Th	1127	2.4	0.7
	1705	2.9	0.9		1606	2.9	0.9
8	0019	-0.2	-0.1	23	0009	-0.1	0.0
Th	0739	2.9	0.9	F	0825	3.0	0.9
	1231	2.1	0.6		1209	2.7	0.8
	1731	3.0	0.9		1617	3.1	0.9
9	0105	-0.6	-0.2	24	0044	-0.5	-0.2
F	0848	3.1	0.9	Sa	0924	3.2	1.0
	1323	2.4	0.7		1254	3.0	0.9
	1800	3.1	0.9		1639	3.3	1.0
10	0150	-0.8	-0.2	25	0121	-0.8	-0.2
Sa	0951	3.2	1.0	Su	1023	3.4	1.0
	1413	2.6	0.8		1316	3.2	1.0
	1836	3.1	0.9		1708	3.5	1.1
11	0236	-0.9	-0.3	26	0203	-1.0	-0.3
Su	1045	3.2	1.0	M	1115	3.4	1.0
	1504	2.7	0.8		1341	3.3	1.0
	1908	3.1	0.9		1747	3.7	1.1
12	0321	-0.8	-0.2	27	0249	-1.1	-0.3
M	1142	3.2	1.0	Tu	1100	3.3*	1.0*
	1546	2.8	0.9		1837	3.7	1.1
	1936	3.1	0.9				
13	0406	-0.7	-0.2	28	0336	-1.0	-0.3
Tu	1237	3.1	0.9	W	1247	3.3	1.0
	1633	2.8	0.9		1502	3.2	1.0
	2019	3.0	0.9		1936	3.6	1.1
14	0452	-0.4	-0.1	29	0425	-0.8	-0.2
W	1330	3.0	0.9	Th	1310	3.2	1.0
	1719	2.7	0.8		1619	3.0	0.9
	2057	2.9	0.9		2042	3.4	1.0
15	0540	-0.2	-0.1	30	0514	-0.4	-0.1
Th	1421	2.9	0.9	F	1327	3.1	0.9
	1825	2.6	0.8		1750	2.6	0.8
	2149	2.8	0.9		2204	3.0	0.9
				31	0602	0.1	0.0
				Sa	1344	3.1	0.9
					1918	2.1	0.6
					2351	2.6	0.8

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0654	0.7	0.2	16	0054	2.2	0.7
Su	1404	3.1	0.9	M	0627	1.5	0.5
	2032	1.5	0.5		1348	3.3	1.0
					2114	1.4	0.4
2	0204	2.4	0.7	17	0327	2.2	0.7
M	0743	1.3	0.4	Tu	0700	2.1	0.6
	1424	3.2	1.0		1355	3.4	1.0
	2137	0.8	0.2		2146	0.9	0.3
3	0416	2.5	0.8	18	1400	3.5	1.1
Tu	0842	2.0	0.6	W	2221	0.3	0.1
	1448	3.4	1.0				
	2230	0.2	0.1				
4	0606	2.8	0.9	19	1407	3.6	1.1
W	0940	2.5	0.8	Th	2259	-0.1	0.0
	1517	3.5	1.1				
	2317	-0.4	-0.1				
5	0735	3.2	1.0	20	0800	3.4*	1.0*
Th	1056	2.9	0.9	F	1419	3.9	1.2
	1543	3.6	1.1		2334	-0.6	-0.2
6	0000	-0.7	-0.2	21	0800	3.6*	1.1*
F	0831	3.5	1.1	Sa	1447	4.0	1.2
	1206	3.2	1.0				
	1612	3.6	1.1				
7	0042	-0.9	-0.3	22	0017	-0.9	-0.3
Sa	0924	3.7	1.1	Su	0900	3.8*	1.2*
	1321	3.3	1.0		1525	4.2	1.3
	1639	3.5	1.1				
8	0125	-0.9	-0.3	23	0059	-1.1	-0.3
Su	1012	3.7	1.1	M	0900	3.8*	1.2*
	1424	3.4	1.0		1615	4.3	1.3
	1706	3.5	1.1				
9	0207	-0.8	-0.2	24	0144	-1.1	-0.3
M	1056	3.7	1.1	Tu	1000	3.8*	1.2*
	1522	3.3	1.0		1712	4.2	1.3
	1745	3.4	1.0				
10	0248	-0.6	-0.2	25	0229	-1.0	-0.3
Tu	1139	3.7	1.1	W	1141	3.8	1.2
	2000	3.2*	1.0*		1430	3.7	1.1
					1818	4.0	1.2
11	0330	-0.4	-0.1	26	0311	-0.7	-0.2
W	1219	3.6	1.1	Th	1149	3.7	1.1
	2000	3.1*	0.9*		1553	3.4	1.0
					1927	3.6	1.1
12	0409	-0.1	0.0	27	0355	-0.2	-0.1
Th	1253	3.5	1.1	F	1200	3.7	1.1
	2000	3.0*	0.9*		1715	2.8	0.9
					2057	3.2	1.0
13	0448	0.2	0.1	28	0437	0.3	0.1
F	1315	3.4	1.0	Sa	1215	3.7	1.1
					1832	2.2	0.7
					2247	2.7	0.8
14	0524	0.6	0.2	29	0515	1.0	0.3
Sa	1333	3.3	1.0	Su	1234	3.8	1.2
	2000	2.3	0.7		1937	1.5	0.5
	2236	2.4	0.7				
15	0557	1.1	0.3	30	0101	2.4	0.7
Su	1341	3.3	1.0	M	0554	1.7	0.5
	2042	1.9	0.6		1253	4.0	1.2
					2035	0.8	0.2

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0336	2.5	0.8	16	1225	4.0	1.2
Tu	0626	2.4	0.7	W	2106	0.5	0.2
	1318	4.1	1.2				
	2125	0.2	0.1				
2	1340	4.2	1.3	17	1236	4.2	1.3
W	2214	-0.3	-0.1	Th	2142	0.0	0.0
3	1409	4.2	1.3	18	1255	4.5	1.4
Th	2300	-0.6	-0.2	F	2224	-0.4	-0.1
4	0700	3.6*	1.1*	19	1327	4.6	1.4
F	1434	4.1	1.2	Sa	2309	-0.8	-0.2
	2342	-0.7	-0.2				
5	0924	4.0	1.2	20	1410	4.7	1.4
Sa	1143	3.9	1.2	Su	2355	-1.0	-0.3
	1456	4.1	1.2				
6	0024	-0.7	-0.2	21	1506	4.7	1.4
Su	0949	4.1	1.2	M			
	1800	3.6*	1.1*				
7	0106	-0.7	-0.2	22	0041	-1.0	-0.3
M	1027	4.1	1.2	Tu	1000	4.1*	1.2*
	1800	3.7*	1.1*		1608	4.6	1.4
8	0145	-0.5	-0.2	23	0127	-0.9	-0.3
Tu	1103	4.1	1.2	W	1051	4.0	1.2
	1800	3.6*	1.1*		1306	3.9	1.2
					1717	4.3	1.3
9	0223	-0.3	-0.1	24	0209	-0.6	-0.2
W	1121	4.0	1.2	Th	1039	3.9	1.2
	1800	3.5*	1.1*		1444	3.5	1.1
					1837	3.9	1.2
10	0259	-0.1	0.0	25	0251	-0.2	-0.1
Th	1146	4.0	1.2	F	1043	3.9	1.2
					1605	2.9	0.9
					2006	3.3	1.0
11	0327	0.3	0.1	26	0330	0.5	0.2
F	1154	3.9	1.2	Sa	1055	4.0	1.2
					1717	2.1	0.6
					2149	2.8	0.9
12	0357	0.7	0.2	27	0405	1.1	0.3
Sa	1206	3.8	1.2	Su	1112	4.2	1.3
					1820	1.4	0.4
					2349	2.5	0.8
13	0418	1.1	0.3	28	0430	1.8	0.5
Su	1211	3.8	1.2	M	1135	4.4	1.3
	1930	2.1	0.6		1915	0.8	0.2
	2303	2.3	0.7				
14	0436	1.6	0.5	29	0208	2.5	0.8
M	1213	3.8	1.2	Tu	0448	2.4	0.7
	1955	1.6	0.5		1158	4.5	1.4
					2011	0.2	0.1
15	0137	2.2	0.7	30	1226	4.5	1.4
Tu	0441	2.1	0.6	W	2103	-0.2	-0.1
	1221	3.9	1.2				
	2027	1.0	0.3				
				31	1252	4.5	1.4
				Th	2152	-0.4	-0.1

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0239	16.0	4.9	16	0320	12.5	3.8
Th	0925	-4.6	-1.4	F	0959	1.0	0.3
	1628	23.5	7.2		1705	19.3	5.9
	2242	6.0	1.8		2324	7.7	2.3
2	0347	16.0	4.9	17	0407	12.4	3.8
F	1023	-4.1	-1.2	Sa	1038	1.6	0.5
	1721	23.6	7.2		1737	19.1	5.8
	2341	4.8	1.5				
3	0454	16.0	4.9	18	0006	7.1	2.2
Sa	1122	-3.0	-0.9	Su	0458	12.4	3.8
	1813	23.4	7.1		1121	2.4	0.7
					1810	18.9	5.8
4	0036	3.4	1.0	19	0041	6.2	1.9
Su	0604	16.1	4.9	M	0549	12.7	3.9
	1221	-1.5	-0.5		1206	3.2	1.0
	1903	22.8	6.9		1842	18.6	5.7
5	0129	2.0	0.6	20	0116	5.2	1.6
M	0717	16.4	5.0	Tu	0644	13.4	4.1
	1323	0.3	0.1		1251	4.1	1.2
	1952	21.9	6.7		1910	18.2	5.5
6	0221	0.7	0.2	21	0155	3.9	1.2
Tu	0825	16.9	5.2	W	0740	14.3	4.4
	1422	2.1	0.6		1340	5.1	1.6
	2039	20.8	6.3		1942	17.8	5.4
7	0313	-0.4	-0.1	22	0230	2.5	0.8
W	0935	17.5	5.3	Th	0836	15.6	4.8
	1523	3.8	1.2		1433	5.9	1.8
	2127	19.5	5.9		2017	17.5	5.3
8	0404	-1.1	-0.3	23	0306	1.0	0.3
Th	1038	18.2	5.5	F	0933	16.9	5.2
	1624	5.3	1.6		1530	6.7	2.0
	2212	18.2	5.5		2056	17.2	5.2
9	0451	-1.4	-0.4	24	0351	-0.5	-0.2
F	1140	18.8	5.7	Sa	1029	18.3	5.6
	1726	6.4	2.0		1627	7.3	2.2
	2258	16.9	5.2		2141	16.9	5.2
10	0538	-1.4	-0.4	25	0438	-1.9	-0.6
Sa	1236	19.2	5.9	Su	1126	19.6	6.0
	1823	7.3	2.2		1726	7.6	2.3
	2343	15.7	4.8		2230	16.8	5.1
11	0623	-1.2	-0.4	26	0526	-3.0	-0.9
Su	1331	19.5	5.9	M	1222	20.7	6.3
	1920	7.8	2.4		1826	7.7	2.3
					2322	16.7	5.1
12	0027	14.7	4.5	27	0620	-3.9	-1.2
M	0709	-0.9	-0.3	Tu	1321	21.6	6.6
	1419	19.6	6.0		1923	7.4	2.3
	2014	8.1	2.5				
13	0111	13.9	4.2	28	0021	16.7	5.1
Tu	0752	-0.4	-0.1	W	0715	-4.3	-1.3
	1507	19.6	6.0		1416	22.2	6.8
	2105	8.3	2.5		2022	6.9	2.1
14	0153	13.3	4.1	29	0127	16.6	5.1
W	0835	0.0	0.0	Th	0813	-4.2	-1.3
	1551	19.5	5.9		1510	22.5	6.9
	2156	8.3	2.5		2121	6.0	1.8
15	0235	12.9	3.9	30	0230	16.6	5.1
Th	0917	0.5	0.2	F	0912	-3.6	-1.1
	1630	19.4	5.9		1604	22.5	6.9
	2242	8.1	2.5		2216	4.8	1.5
				31	0340	16.6	5.1
				Sa	1011	-2.5	-0.8
					1656	22.3	6.8
					2312	3.5	1.1

FEBRUARY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0450	16.8	5.1	16	0441	13.9	4.2
Su	1110	-1.1	-0.3	M	1101	3.5	1.1
	1746	21.8	6.6		1724	17.6	5.4
					2355	4.9	1.5
2	0007	2.1	0.6	17	0535	14.5	4.4
M	0559	17.1	5.2	Tu	1150	4.3	1.3
	1209	0.5	0.2		1759	17.2	5.2
	1835	21.0	6.4				
3	0100	0.9	0.3	18	0031	3.7	1.1
Tu	0708	17.6	5.4	W	0629	15.5	4.7
	1308	2.1	0.6		1237	5.1	1.6
	1921	20.0	6.1		1831	16.9	5.2
4	0151	0.0	0.0	19	0109	2.4	0.7
W	0811	18.1	5.5	Th	0724	16.6	5.1
	1408	3.6	1.1		1331	5.8	1.8
	2009	18.9	5.8		1906	16.6	5.1
5	0239	-0.6	-0.2	20	0150	1.1	0.3
Th	0913	18.5	5.6	F	0817	17.8	5.4
	1506	4.9	1.5		1423	6.4	2.0
	2055	17.8	5.4		1945	16.4	5.0
6	0328	-0.9	-0.3	21	0233	-0.2	-0.1
F	1012	18.9	5.8	Sa	0913	18.9	5.8
	1606	5.9	1.8		1518	6.8	2.1
	2140	16.7	5.1		2031	16.4	5.0
7	0416	-0.9	-0.3	22	0321	-1.4	-0.4
Sa	1111	19.0	5.8	Su	1008	19.8	6.0
	1702	6.7	2.0		1614	7.0	2.1
	2225	15.8	4.8		2119	16.5	5.0
8	0502	-0.7	-0.2	23	0413	-2.3	-0.7
Su	1203	19.1	5.8	M	1104	20.6	6.3
	1755	7.3	2.2		1709	7.0	2.1
	2311	15.1	4.6		2215	16.6	5.1
9	0548	-0.4	-0.1	24	0506	-2.9	-0.9
M	1252	19.0	5.8	Tu	1201	21.1	6.4
	1847	7.7	2.3		1805	6.7	2.0
	2356	14.5	4.4		2314	16.7	5.1
10	0634	-0.1	0.0	25	0603	-3.1	-0.9
Tu	1340	18.9	5.8	W	1255	21.3	6.5
	1935	8.0	2.4		1904	6.2	1.9
11	0038	14.0	4.3	26	0017	16.8	5.1
W	0718	0.3	0.1	Th	0702	-2.9	-0.9
	1426	18.7	5.7		1350	21.4	6.5
	2025	8.0	2.4		2002	5.3	1.6
12	0125	13.7	4.2	27	0125	17.0	5.2
Th	0803	0.7	0.2	F	0801	-2.2	-0.7
	1507	18.6	5.7		1443	21.2	6.5
	2110	7.8	2.4		2057	4.2	1.3
13	0209	13.5	4.1	28	0233	17.2	5.2
F	0848	1.3	0.4	Sa	0900	-1.2	-0.4
	1547	18.5	5.6		1536	20.9	6.4
	2156	7.4	2.3		2151	3.0	0.9
14	0300	13.4	4.1				
Sa	0931	1.9	0.6				
	1620	18.2	5.5				
	2238	6.8	2.1				
15	0349	13.5	4.1				
Su	1013	2.7	0.8				
	1655	18.0	5.5				
	2317	5.9	1.8				

MARCH

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0340	17.5	5.3	16	0336	15.3	4.7
Su	0959	0.0	0.0	M	0955	4.1	1.2
	1625	20.3	6.2		1600	16.5	5.0
	2243	1.9	0.6		2227	3.9	1.2
2	0447	18.0	5.5	17	0429	16.1	4.9
M	1058	1.4	0.4	Tu	1046	4.8	1.5
	1715	19.5	5.9		1634	16.1	4.9
	2335	0.9	0.3		2306	2.9	0.9
3	0551	18.5	5.6	18	0522	17.1	5.2
Tu	1200	2.7	0.8	W	1138	5.4	1.6
	1802	18.5	5.6		1710	15.7	4.8
					2345	1.7	0.5
4	0027	0.2	0.1	19	0613	18.2	5.5
W	0653	18.9	5.8	Th	1229	5.8	1.8
	1257	3.8	1.2		1749	15.5	4.7
	1849	17.6	5.4				
5	0115	-0.1	0.0	20	0028	0.6	0.2
Th	0751	19.2	5.9	F	0706	19.3	5.9
	1353	4.7	1.4		1321	6.1	1.9
	1937	16.7	5.1		1834	15.5	4.7
6	0203	-0.2	-0.1	21	0114	-0.4	-0.1
F	0847	19.4	5.9	Sa	0758	20.1	6.1
	1449	5.5	1.7		1414	6.3	1.9
	2022	15.9	4.8		1921	15.5	4.7
7	0250	-0.1	0.0	22	0203	-1.3	-0.4
Sa	0939	19.3	5.9	Su	0854	20.7	6.3
	1542	6.1	1.9		1509	6.3	1.9
	2108	15.3	4.7		2015	15.7	4.8
8	0337	0.1	0.0	23	0257	-1.9	-0.6
Su	1028	19.1	5.8	M	0948	21.1	6.4
	1631	6.6	2.0		1602	6.1	1.9
	2153	14.8	4.5		2111	16.0	4.9
9	0422	0.4	0.1	24	0353	-2.1	-0.6
M	1117	18.8	5.7	Tu	1041	21.2	6.5
	1719	6.9	2.1		1656	5.7	1.7
	2236	14.5	4.4		2213	16.3	5.0
10	0511	0.7	0.2	25	0449	-1.9	-0.6
Tu	1206	18.5	5.6	W	1137	21.1	6.4
	1810	7.1	2.2		1749	5.0	1.5
	2322	14.3	4.4		2317	16.6	5.1
11	0557	1.1	0.3	26	0549	-1.4	-0.4
W	1250	18.3	5.6	Th	1230	20.9	6.4
	1856	7.1	2.2		1845	4.0	1.2
12	0010	14.2	4.3	27	0024	17.0	5.2
Th	0645	1.5	0.5	F	0650	-0.5	-0.2
	1334	18.0	5.5		1322	20.4	6.2
	1942	6.9	2.1		1940	3.0	0.9
13	0100	14.1	4.3	28	0131	17.4	5.3
F	0731	2.1	0.6	Sa	0750	0.6	0.2
	1413	17.7	5.4		1415	19.7	6.0
	2025	6.4	2.0		2033	1.9	0.6
14	0150	14.3	4.4	29	0238	18.0	5.5
Sa	0816	2.7	0.8	Su	0851	1.8	0.5
	1449	17.4	5.3		1505	18.9	5.8
	2107	5.7	1.7		2125	1.0	0.3
15	0243	14.6	4.5	30	0344	18.7	5.7
Su	0906	3.4	1.0	M	0953	2.9	0.9
	1524	17.0	5.2		1552	17.9	5.5
	2149	4.9	1.5		2214	0.4	0.1
				31	0443	19.3	5.9
				Tu	1053	3.8	1.2
					1641	16.9	5.2
					2302	0.0	0.0

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0542	19.8	6.0	16	0505	19.8	6.0
W	1149	4.6	1.4	Th	1124	6.3	1.9
	1730	16.0	4.9		1627	14.8	4.5
	2351	0.0	0.0		2305	-0.6	-0.2
2	0634	20.0	6.1	17	0555	20.8	6.3
Th	1244	5.2	1.6	F	1217	6.3	1.9
	1816	15.2	4.6		1717	14.7	4.5
					2354	-1.3	-0.4
3	0037	0.1	0.0	18	0647	21.6	6.6
F	0730	20.1	6.1	Sa	1309	6.2	1.9
	1339	5.6	1.7		1808	14.8	4.5
	1901	14.6	4.5				
4	0123	0.4	0.1	19	0045	-1.8	-0.5
Sa	0815	19.9	6.1	Su	0741	22.0	6.7
	1428	5.9	1.8		1401	5.8	1.8
	1946	14.1	4.3		1904	15.1	4.6
5	0209	0.8	0.2	20	0140	-2.0	-0.6
Su	0901	19.6	6.0	M	0832	22.2	6.8
	1515	6.2	1.9		1454	5.3	1.6
	2032	13.9	4.2		2006	15.4	4.7
6	0255	1.1	0.3	21	0236	-1.8	-0.5
M	0946	19.2	5.9	Tu	0924	22.0	6.7
	1602	6.3	1.9		1549	4.6	1.4
	2118	13.8	4.2		2110	15.8	4.8
7	0343	1.5	0.5	22	0335	-1.2	-0.4
Tu	1031	18.8	5.7	W	1018	21.7	6.6
	1647	6.3	1.9		1642	3.7	1.1
	2203	13.8	4.2		2217	16.2	4.9
8	0428	1.9	0.6	23	0437	-0.2	-0.1
W	1114	18.4	5.6	Th	1109	21.1	6.4
	1729	6.1	1.9		1734	2.6	0.8
	2254	14.0	4.3		2326	16.8	5.1
9	0517	2.5	0.8	24	0539	1.1	0.3
Th	1153	18.0	5.5	F	1202	20.2	6.2
	1815	5.7	1.7		1829	1.5	0.5
	2345	14.2	4.3				
10	0606	3.1	0.9	25	0034	17.5	5.3
F	1233	17.6	5.4	Sa	0641	2.4	0.7
	1857	5.1	1.6		1251	19.3	5.9
					1918	0.5	0.2
11	0040	14.7	4.5	26	0141	18.3	5.6
Sa	0655	3.8	1.2	Su	0744	3.6	1.1
	1311	17.1	5.2		1341	18.1	5.5
	1939	4.4	1.3		2009	-0.2	-0.1
12	0133	15.4	4.7	27	0243	19.2	5.9
Su	0747	4.5	1.4	M	0845	4.6	1.4
	1350	16.5	5.0		1431	16.9	5.2
	2018	3.4	1.0		2055	-0.6	-0.2
13	0228	16.3	5.0	28	0342	19.9	6.1
M	0839	5.2	1.6	Tu	0946	5.3	1.6
	1424	15.9	4.8		1517	15.8	4.8
	2059	2.4	0.7		2144	-0.6	-0.2
14	0321	17.5	5.3	29	0437	20.4	6.2
Tu	0936	5.7	1.7	W	1045	5.8	1.8
	1503	15.4	4.7		1606	14.8	4.5
	2138	1.4	0.4		2230	-0.4	-0.1
15	0414	18.7	5.7	30	0528	20.6	6.3
W	1028	6.1	1.9	Th	1139	6.1	1.9
	1545	15.0	4.6		1654	13.9	4.2
	2220	0.4	0.1		2313	0.0	0.0

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0615	20.6	6.3	16	0536	22.7	6.9
F	1232	6.2	1.9	Sa	1158	6.5	2.0
	1737	13.3	4.1		1647	14.7	4.5
	2359	0.4	0.1		2330	-2.9	-0.9
2	0700	20.4	6.2	17	0628	23.1	7.0
Sa	1319	6.4	2.0	Su	1251	5.8	1.8
	1823	13.0	4.0		1750	14.9	4.5
3	0044	0.9	0.3	18	0025	-2.8	-0.9
Su	0742	20.1	6.1	M	0721	23.2	7.1
	1405	6.4	2.0		1345	5.0	1.5
	1908	12.8	3.9		1854	15.1	4.6
4	0127	1.4	0.4	19	0121	-2.1	-0.6
M	0825	19.8	6.0	Tu	0813	23.0	7.0
	1447	6.3	1.9		1439	3.9	1.2
	1955	12.8	3.9		2003	15.5	4.7
5	0212	1.9	0.6	20	0220	-1.1	-0.3
Tu	0900	19.4	5.9	W	0903	22.5	6.9
	1529	6.0	1.8		1531	2.7	0.8
	2043	13.0	4.0		2111	16.0	4.9
6	0257	2.5	0.8	21	0322	0.3	0.1
W	0942	19.0	5.8	Th	0952	21.7	6.6
	1611	5.6	1.7		1623	1.4	0.4
	2133	13.2	4.0		2221	16.7	5.1
7	0346	3.2	1.0	22	0423	1.9	0.6
Th	1018	18.5	5.6	F	1041	20.7	6.3
	1653	4.9	1.5		1715	0.2	0.1
	2228	13.7	4.2		2331	17.5	5.3
8	0435	4.0	1.2	23	0527	3.4	1.0
F	1057	18.0	5.5	Sa	1132	19.5	5.9
	1735	4.1	1.2		1806	-0.8	-0.2
	2323	14.5	4.4				
9	0527	4.8	1.5	24	0038	18.4	5.6
Sa	1133	17.4	5.3	Su	0630	4.8	1.5
	1811	3.1	0.9		1221	18.1	5.5
					1855	-1.3	-0.4
10	0020	15.5	4.7	25	0142	19.4	5.9
Su	0621	5.6	1.7	M	0735	5.8	1.8
	1210	16.7	5.1		1307	16.8	5.1
	1853	2.1	0.6		1944	-1.5	-0.5
11	0112	16.7	5.1	26	0241	20.1	6.1
M	0718	6.3	1.9	Tu	0837	6.5	2.0
	1247	16.1	4.9		1357	15.5	4.7
	1931	0.9	0.3		2030	-1.4	-0.4
12	0207	18.1	5.5	27	0336	20.6	6.3
Tu	0816	6.8	2.1	W	0935	6.9	2.1
	1329	15.5	4.7		1445	14.3	4.4
	2012	-0.2	-0.1		2115	-1.0	-0.3
13	0300	19.5	5.9	28	0426	20.8	6.3
W	0911	7.0	2.1	Th	1031	7.1	2.2
	1411	15.0	4.6		1530	13.4	4.1
	2057	-1.2	-0.4		2159	-0.5	-0.2
14	0352	20.8	6.3	29	0511	20.8	6.3
Th	1010	7.0	2.1	F	1122	7.1	2.2
	1459	14.7	4.5		1615	12.8	3.9
	2144	-2.1	-0.6		2242	0.1	0.0
15	0444	21.9	6.7	30	0553	20.6	6.3
F	1103	6.9	2.1	Sa	1212	7.1	2.2
	1552	14.6	4.5		1658	12.3	3.7
	2233	-2.7	-0.8		2324	0.7	0.2
				31	0632	20.3	6.2
				Su	1254	7.0	2.1
					1745	12.1	3.7

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0006	1.2	0.4	16	0007	-2.8	-0.9
M	0711	20.1	6.1	Tu	0657	23.4	7.1
	1336	6.7	2.0		1324	3.7	1.1
	1830	12.1	3.7		1847	15.7	4.8
2	0047	1.9	0.6	17	0106	-1.5	-0.5
Tu	0747	19.7	6.0	W	0749	22.9	7.0
	1417	6.3	1.9		1416	2.2	0.7
	1920	12.2	3.7		2000	16.2	4.9
3	0133	2.6	0.8	18	0206	0.2	0.1
W	0820	19.4	5.9	Th	0838	22.2	6.8
	1457	5.6	1.7		1509	0.7	0.2
	2010	12.5	3.8		2111	16.8	5.1
4	0218	3.4	1.0	19	0307	2.0	0.6
Th	0854	19.0	5.8	F	0926	21.1	6.4
	1536	4.7	1.4		1601	-0.5	-0.2
	2106	13.1	4.0		2220	17.6	5.4
5	0308	4.3	1.3	20	0413	3.7	1.1
F	0927	18.5	5.6	Sa	1014	19.8	6.0
	1614	3.7	1.1		1652	-1.5	-0.5
	2202	14.0	4.3		2328	18.5	5.6
6	0359	5.3	1.6	21	0516	5.2	1.6
Sa	1002	17.9	5.5	Su	1103	18.5	5.6
	1651	2.6	0.8		1742	-2.0	-0.6
	2258	15.2	4.6				
7	0455	6.2	1.9	22	0031	19.4	5.9
Su	1036	17.2	5.2	M	0619	6.3	1.9
	1730	1.3	0.4		1150	17.1	5.2
	2354	16.6	5.1		1831	-2.1	-0.6
8	0550	7.0	2.1	23	0130	20.0	6.1
M	1113	16.6	5.1	Tu	0719	7.0	2.1
	1809	0.0	0.0		1241	15.8	4.8
					1917	-1.9	-0.6
9	0049	18.1	5.5	24	0226	20.4	6.2
Tu	0650	7.5	2.3	W	0819	7.5	2.3
	1155	16.1	4.9		1327	14.6	4.5
	1851	-1.2	-0.4		2003	-1.4	-0.4
10	0142	19.6	6.0	25	0315	20.5	6.2
W	0747	7.8	2.4	Th	0917	7.7	2.3
	1240	15.6	4.8		1413	13.7	4.2
	1936	-2.3	-0.7		2046	-0.8	-0.2
11	0237	21.0	6.4	26	0403	20.5	6.2
Th	0846	7.8	2.4	F	1009	7.8	2.4
	1331	15.3	4.7		1457	13.0	4.0
	2027	-3.2	-1.0		2130	-0.2	-0.1
12	0330	22.1	6.7	27	0448	20.3	6.2
F	0943	7.6	2.3	Sa	1058	7.8	2.4
	1427	15.2	4.6		1540	12.5	3.8
	2116	-3.8	-1.2		2212	0.4	0.1
13	0424	22.9	7.0	28	0526	20.1	6.1
Sa	1040	7.0	2.1	Su	1143	7.6	2.3
	1526	15.2	4.6		1623	12.1	3.7
	2212	-3.9	-1.2		2254	1.0	0.3
14	0514	23.4	7.1	29	0601	19.8	6.0
Su	1133	6.2	1.9	M	1225	7.3	2.2
	1630	15.2	4.6		1710	12.0	3.7
	2308	-3.6	-1.1		2336	1.7	0.5
15	0607	23.6	7.2	30	0637	19.5	5.9
M	1229	5.1	1.6	Tu	1304	6.7	2.0
	1737	15.4	4.7		1800	12.0	3.7

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0018	2.5	0.8	16	0053	0.0	0.0
W	0709	19.2	5.9	Th	0721	21.9	6.7
	1342	5.9	1.8		1351	0.6	0.2
	1853	12.3	3.7		1953	17.4	5.3
2	0100	3.4	1.0	17	0152	1.7	0.5
Th	0737	18.9	5.8	F	0811	21.0	6.4
	1418	5.0	1.5		1443	-0.7	-0.2
	1945	12.9	3.9		2102	18.1	5.5
3	0149	4.4	1.3	18	0256	3.4	1.0
F	0809	18.4	5.6	Sa	0857	19.8	6.0
	1455	3.9	1.2		1535	-1.6	-0.5
	2042	13.8	4.2		2208	18.8	5.7
4	0235	5.4	1.6	19	0357	4.9	1.5
Sa	0840	17.9	5.5	Su	0946	18.6	5.7
	1532	2.6	0.8		1625	-2.0	-0.6
	2137	15.0	4.6		2313	19.4	5.9
5	0330	6.3	1.9	20	0500	6.0	1.8
Su	0915	17.4	5.3	M	1035	17.3	5.3
	1609	1.3	0.4		1714	-2.0	-0.6
	2233	16.4	5.0				
6	0426	7.1	2.2	21	0012	19.8	6.0
M	0951	16.9	5.2	Tu	0559	6.8	2.1
	1648	-0.1	0.0		1124	16.2	4.9
	2327	17.8	5.4		1803	-1.8	-0.5
7	0523	7.7	2.3	22	0108	19.9	6.1
Tu	1029	16.5	5.0	W	0659	7.4	2.3
	1731	-1.4	-0.4		1212	15.2	4.6
					1849	-1.3	-0.4
8	0021	19.3	5.9	23	0159	19.9	6.1
W	0621	8.1	2.5	Th	0755	7.7	2.3
	1116	16.3	5.0		1256	14.3	4.4
	1817	-2.6	-0.8		1935	-0.8	-0.2
9	0116	20.5	6.2	24	0249	19.8	6.0
Th	0721	8.2	2.5	F	0848	7.9	2.4
	1207	16.1	4.9		1344	13.7	4.2
	1908	-3.6	-1.1		2020	-0.2	-0.1
10	0212	21.6	6.6	25	0334	19.6	6.0
F	0817	7.9	2.4	Sa	0938	8.0	2.4
	1306	16.0	4.9		1428	13.2	4.0
	2002	-4.2	-1.3		2104	0.4	0.1
11	0304	22.4	6.8	26	0413	19.4	5.9
Sa	0915	7.4	2.3	Su	1022	7.8	2.4
	1406	16.0	4.9		1514	12.8	3.9
	2055	-4.3	-1.3		2146	1.1	0.3
12	0358	22.9	7.0	27	0451	19.1	5.8
Su	1012	6.5	2.0	M	1104	7.4	2.3
	1511	16.0	4.9		1600	12.6	3.8
	2153	-3.9	-1.2		2228	1.8	0.5
13	0450	23.1	7.0	28	0525	18.8	5.7
M	1107	5.2	1.6	Tu	1146	6.9	2.1
	1620	16.2	4.9		1650	12.6	3.8
	2252	-3.0	-0.9		2311	2.6	0.8
14	0540	23.0	7.0	29	0557	18.5	5.6
Tu	1203	3.7	1.1	W	1225	6.1	1.9
	1730	16.4	5.0		1739	12.9	3.9
	2351	-1.7	-0.5		2353	3.5	1.1
15	0632	22.6	6.9	30	0625	18.1	5.5
W	1259	2.1	0.6	Th	1300	5.2	1.6
	1843	16.8	5.1		1832	13.5	4.1
				31	0041	4.5	1.4
				F	0656	17.7	5.4
					1337	4.1	1.2
					1927	14.3	4.4

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0127	5.4	1.6	16	0243	4.4	1.3
Sa	0727	17.2	5.2	Su	0831	18.0	5.5
	1410	2.9	0.9		1501	-1.5	-0.5
	2019	15.4	4.7		2145	19.7	6.0
2	0216	6.2	1.9	17	0343	5.4	1.6
Su	0757	16.9	5.2	M	0920	17.0	5.2
	1448	1.6	0.5		1552	-1.5	-0.5
	2112	16.6	5.1		2244	19.8	6.0
3	0309	6.9	2.1	18	0440	6.1	1.9
M	0836	16.6	5.1	Tu	1009	16.2	4.9
	1528	0.3	0.1		1643	-1.2	-0.4
	2204	17.9	5.5		2340	19.7	6.0
4	0406	7.4	2.3	19	0535	6.7	2.0
Tu	0915	16.4	5.0	W	1056	15.4	4.7
	1614	-1.0	-0.3		1729	-0.7	-0.2
	2259	19.0	5.8				
5	0500	7.7	2.3	20	0032	19.5	5.9
W	1000	16.4	5.0	Th	0627	7.1	2.2
	1700	-2.2	-0.7		1143	14.8	4.5
	2352	20.1	6.1		1819	-0.2	-0.1
6	0557	7.8	2.4	21	0123	19.2	5.9
Th	1052	16.4	5.0	F	0720	7.4	2.3
	1752	-3.1	-0.9		1229	14.3	4.4
					1905	0.3	0.1
7	0051	20.9	6.4	22	0209	18.9	5.8
F	0653	7.6	2.3	Sa	0809	7.5	2.3
	1151	16.5	5.0		1318	13.9	4.2
	1846	-3.6	-1.1		1950	0.9	0.3
8	0143	21.5	6.6	23	0248	18.5	5.6
Sa	0751	7.1	2.2	Su	0854	7.3	2.2
	1251	16.6	5.1		1404	13.7	4.2
	1943	-3.7	-1.1		2035	1.6	0.5
9	0238	21.9	6.7	24	0329	18.2	5.5
Su	0847	6.2	1.9	M	0939	7.0	2.1
	1359	16.8	5.1		1454	13.6	4.1
	2042	-3.3	-1.0		2121	2.3	0.7
10	0330	22.0	6.7	25	0406	17.8	5.4
M	0943	4.9	1.5	Tu	1020	6.4	2.0
	1506	17.0	5.2		1543	13.7	4.2
	2141	-2.4	-0.7		2203	3.1	0.9
11	0422	21.9	6.7	26	0438	17.4	5.3
Tu	1041	3.5	1.1	W	1059	5.7	1.7
	1616	17.3	5.3		1635	14.1	4.3
	2240	-1.2	-0.4		2248	4.0	1.2
12	0513	21.5	6.6	27	0510	17.0	5.2
W	1134	2.0	0.6	Th	1135	4.8	1.5
	1727	17.8	5.4		1727	14.7	4.5
	2340	0.3	0.1		2337	4.8	1.5
13	0601	20.9	6.4	28	0539	16.5	5.0
Th	1228	0.6	0.2	F	1213	3.9	1.2
	1837	18.4	5.6		1816	15.5	4.7
14	0042	1.8	0.5	29	0027	5.5	1.7
F	0651	20.0	6.1	Sa	0611	16.1	4.9
	1318	-0.5	-0.2		1249	2.8	0.9
	1941	19.0	5.8		1905	16.5	5.0
15	0142	3.2	1.0	30	0114	6.1	1.9
Sa	0742	19.0	5.8	Su	0646	15.8	4.8
	1411	-1.2	-0.4		1325	1.7	0.5
	2046	19.5	5.9		1954	17.6	5.4
				31	0207	6.6	2.0
				M	0725	15.7	4.8
					1407	0.6	0.2
					2046	18.6	5.7

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0256	7.0	2.1	16	0415	6.0	1.8
Tu	0804	15.7	4.8	W	0940	15.0	4.6
	1453	-0.5	-0.2		1606	0.1	0.0
	2141	19.4	5.9		2259	19.5	5.9
2	0349	7.1	2.2	17	0504	6.3	1.9
W	0853	15.9	4.8	Th	1029	14.6	4.5
	1542	-1.5	-0.5		1654	0.6	0.2
	2233	20.1	6.1		2346	19.0	5.8
3	0443	7.1	2.2	18	0555	6.5	2.0
Th	0945	16.1	4.9	F	1115	14.4	4.4
	1635	-2.2	-0.7		1743	1.2	0.4
	2326	20.6	6.3				
4	0535	6.8	2.1	19	0035	18.5	5.6
F	1042	16.4	5.0	Sa	0641	6.5	2.0
	1730	-2.5	-0.8		1205	14.3	4.4
					1829	1.8	0.5
5	0022	20.9	6.4	20	0117	18.0	5.5
Sa	0632	6.2	1.9	Su	0726	6.3	1.9
	1145	16.7	5.1		1254	14.3	4.4
	1829	-2.4	-0.7		1918	2.5	0.8
6	0114	21.0	6.4	21	0156	17.6	5.4
Su	0726	5.3	1.6	M	0808	5.8	1.8
	1249	17.1	5.2		1347	14.4	4.4
	1928	-1.9	-0.6		2006	3.3	1.0
7	0209	20.9	6.4	22	0233	17.0	5.2
M	0822	4.1	1.2	Tu	0852	5.3	1.6
	1359	17.5	5.3		1439	14.8	4.5
	2030	-1.0	-0.3		2052	4.1	1.2
8	0259	20.6	6.3	23	0308	16.5	5.0
Tu	0916	2.7	0.8	W	0932	4.6	1.4
	1509	18.1	5.5		1531	15.4	4.7
	2129	0.1	0.0		2145	4.8	1.5
9	0351	20.1	6.1	24	0343	15.9	4.8
W	1012	1.4	0.4	Th	1007	3.8	1.2
	1616	18.7	5.7		1620	16.2	4.9
	2232	1.3	0.4		2233	5.4	1.6
10	0440	19.3	5.9	25	0418	15.4	4.7
Th	1105	0.2	0.1	F	1046	2.9	0.9
	1723	19.4	5.9		1709	17.1	5.2
	2332	2.5	0.8		2324	5.9	1.8
11	0530	18.5	5.6	26	0451	15.0	4.6
F	1154	-0.6	-0.2	Sa	1125	2.1	0.6
	1826	20.0	6.1		1757	18.1	5.5
12	0033	3.5	1.1	27	0014	6.3	1.9
Sa	0621	17.6	5.4	Su	0529	14.7	4.5
	1247	-1.0	-0.3		1204	1.1	0.3
	1925	20.3	6.2		1845	19.0	5.8
13	0132	4.3	1.3	28	0103	6.6	2.0
Su	0711	16.8	5.1	M	0608	14.6	4.5
	1336	-1.0	-0.3		1247	0.3	0.1
	2021	20.4	6.2		1935	19.8	6.0
14	0228	5.0	1.5	29	0153	6.7	2.0
M	0802	16.1	4.9	Tu	0653	14.8	4.5
	1426	-0.8	-0.2		1333	-0.5	-0.2
	2116	20.3	6.2		2024	20.4	6.2
15	0322	5.5	1.7	30	0243	6.6	2.0
Tu	0851	15.5	4.7	W	0743	15.0	4.6
	1517	-0.4	-0.1		1425	-1.1	-0.3
	2209	19.9	6.1		2116	20.8	6.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

NUSHAGAK BAY (Clarks Pt.), ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time	Height	
	h m	ft	m
1	0335	6.3	1.9
Th	0838	15.4	4.7
	1520	-1.4	-0.4
	2208	21.0	6.4
2	0427	5.8	1.8
F	0938	15.8	4.8
	1615	-1.4	-0.4
	2302	21.0	6.4
3	0519	5.0	1.5
Sa	1043	16.3	5.0
	1715	-0.9	-0.3
	2352	20.8	6.3
4	0612	3.9	1.2
Su	1149	16.9	5.2
	1817	-0.1	0.0
5	0045	20.3	6.2
M	0706	2.7	0.8
	1259	17.6	5.4
	1919	0.9	0.3
6	0135	19.7	6.0
Tu	0759	1.4	0.4
	1407	18.5	5.6
	2021	2.0	0.6
7	0227	18.9	5.8
W	0851	0.3	0.1
	1513	19.4	5.9
	2124	3.0	0.9
8	0317	18.0	5.5
Th	0943	-0.5	-0.2
	1616	20.2	6.2
	2226	3.8	1.2
9	0408	17.0	5.2
F	1033	-1.0	-0.3
	1715	20.8	6.3
	2326	4.5	1.4
10	0500	16.1	4.9
Sa	1123	-1.1	-0.3
	1811	21.1	6.4
11	0023	4.9	1.5
Su	0549	15.4	4.7
	1212	-0.9	-0.3
	1906	21.2	6.5
12	0118	5.2	1.6
M	0641	14.7	4.5
	1301	-0.4	-0.1
	1957	20.9	6.4
13	0211	5.5	1.7
Tu	0730	14.3	4.4
	1350	0.1	0.0
	2043	20.5	6.2
14	0301	5.7	1.7
W	0819	14.0	4.3
	1438	0.7	0.2
	2129	19.9	6.1
15	0348	5.8	1.8
Th	0909	13.9	4.2
	1524	1.4	0.4
	2214	19.3	5.9
16	0433	5.8	1.8
F	0957	13.8	4.2
	1615	2.0	0.6
	2257	18.7	5.7
17	0516	5.5	1.7
Sa	1048	13.9	4.2
	1701	2.8	0.9
	2339	18.1	5.5
18	0601	5.1	1.6
Su	1140	14.2	4.3
	1753	3.6	1.1
19	0015	17.5	5.3
M	0643	4.6	1.4
	1235	14.7	4.5
	1842	4.4	1.3
20	0054	16.9	5.2
Tu	0722	3.9	1.2
	1328	15.4	4.7
	1935	5.2	1.6
21	0129	16.2	4.9
W	0801	3.1	0.9
	1420	16.3	5.0
	2028	5.9	1.8
22	0208	15.5	4.7
Th	0840	2.3	0.7
	1512	17.3	5.3
	2122	6.4	2.0
23	0244	14.9	4.5
F	0921	1.5	0.5
	1601	18.4	5.6
	2215	6.7	2.0
24	0322	14.4	4.4
Sa	1000	0.7	0.2
	1649	19.5	5.9
	2308	6.9	2.1
25	0404	14.1	4.3
Su	1044	-0.1	0.0
	1735	20.4	6.2
	2357	6.9	2.1
26	0450	14.0	4.3
M	1128	-0.8	-0.2
	1824	21.1	6.4
27	0046	6.7	2.0
Tu	0539	14.1	4.3
	1216	-1.2	-0.4
	1913	21.6	6.6
28	0139	6.4	2.0
W	0631	14.4	4.4
	1308	-1.5	-0.5
	2003	21.9	6.7
29	0227	5.8	1.8
Th	0733	14.8	4.5
	1403	-1.3	-0.4
	2054	21.9	6.7
30	0320	4.9	1.5
F	0835	15.2	4.6
	1501	-0.8	-0.2
	2145	21.6	6.6
31	0412	3.8	1.2
Sa	0940	15.8	4.8
	1600	0.1	0.0
	2235	21.1	6.4

NOVEMBER

Day	Time	Height	
	h m	ft	m
1	0501	2.6	0.8
Su	1050	16.6	5.1
	1702	1.3	0.4
	2324	20.4	6.2
2	0555	1.2	0.4
M	1200	17.5	5.3
	1806	2.5	0.8
3	0014	19.5	5.9
Tu	0645	0.0	0.0
	1307	18.5	5.6
	1910	3.7	1.1
4	0103	18.4	5.6
W	0737	-0.9	-0.3
	1413	19.6	6.0
	2013	4.7	1.4
5	0155	17.3	5.3
Th	0826	-1.5	-0.5
	1512	20.5	6.2
	2117	5.4	1.6
6	0245	16.1	4.9
F	0917	-1.7	-0.5
	1611	21.2	6.5
	2219	5.7	1.7
7	0336	15.1	4.6
Sa	1003	-1.5	-0.5
	1703	21.5	6.6
	2315	5.9	1.8
8	0428	14.3	4.4
Su	1052	-1.1	-0.3
	1755	21.5	6.6
9	0011	6.0	1.8
M	0517	13.6	4.1
	1139	-0.5	-0.2
	1841	21.3	6.5
10	0100	6.1	1.9
Tu	0606	13.2	4.0
	1224	0.2	0.1
	1926	20.9	6.4
11	0149	6.0	1.8
W	0654	12.9	3.9
	1313	0.9	0.3
	2009	20.4	6.2
12	0234	5.9	1.8
Th	0745	12.9	3.9
	1359	1.6	0.5
	2050	19.8	6.0
13	0316	5.6	1.7
F	0834	12.9	3.9
	1444	2.5	0.8
	2129	19.3	5.9
14	0358	5.1	1.6
Sa	0927	13.2	4.0
	1533	3.4	1.0
	2205	18.7	5.7
15	0440	4.5	1.4
Su	1020	13.7	4.2
	1622	4.3	1.3
	2240	18.0	5.5
16	0519	3.7	1.1
M	1118	14.4	4.4
	1714	5.3	1.6
	2316	17.3	5.3
17	0558	2.8	0.9
Tu	1212	15.4	4.7
	1808	6.2	1.9
	2351	16.5	5.0
18	0636	1.9	0.6
W	1305	16.5	5.0
	1905	6.9	2.1
19	0030	15.8	4.8
Th	0716	1.0	0.3
	1357	17.8	5.4
	2001	7.4	2.3
20	0105	15.1	4.6
F	0756	0.1	0.0
	1446	19.1	5.8
	2057	7.6	2.3
21	0147	14.6	4.5
Sa	0837	-0.8	-0.2
	1535	20.2	6.2
	2150	7.7	2.3
22	0233	14.3	4.4
Su	0921	-1.5	-0.5
	1624	21.2	6.5
	2243	7.5	2.3
23	0323	14.1	4.3
M	1009	-2.1	-0.6
	1715	22.0	6.7
	2335	7.1	2.2
24	0417	14.2	4.3
Tu	1100	-2.4	-0.7
	1802	22.5	6.9
25	0028	6.5	2.0
W	0516	14.3	4.4
	1152	-2.3	-0.7
	1853	22.8	6.9
26	0120	5.6	1.7
Th	0619	14.6	4.5
	1248	-1.9	-0.6
	1942	22.7	6.9
27	0209	4.4	1.3
F	0726	15.0	4.6
	1347	-0.9	-0.3
	2029	22.4	6.8
28	0301	3.0	0.9
Sa	0836	15.6	4.8
	1446	0.4	0.1
	2118	21.8	6.6
29	0353	1.5	0.5
Su	0947	16.4	5.0
	1549	1.9	0.6
	2207	20.9	6.4
30	0442	0.1	0.0
M	1057	17.4	5.3
	1654	3.4	1.0
	2256	19.8	6.0

DECEMBER

Day	Time	Height	
	h m	ft	m
1	0534	-1.1	-0.3
Tu	1206	18.6	5.7
	1759	4.8	1.5
	2345	18.5	5.6
2	0624	-2.0	-0.6
W	1309	19.7	6.0
	1903	5.8	1.8
3	0033	17.2	5.2
Th	0714	-2.4	-0.7
	1411	20.5	6.2
	2006	6.5	2.0
4	0126	16.0	4.9
F	0803	-2.3	-0.7
	1507	21.1	6.4
	2109	6.8	2.1
5	0215	14.9	4.5
Sa	0851	-2.0	-0.6
	1559	21.4	6.5
	2206	7.0	2.1
6	0307	14.0	4.3
Su	0939	-1.4	-0.4
	1648	21.4	6.5
	2302	7.0	2.1
7	0356	13.2	4.0
M	1025	-0.7	-0.2
	1733	21.2	6.5
	2351	6.9	2.1
8	0444	12.7	3.9
Tu	1108	0.0	0.0
	1815	20.9	6.4
9	0038	6.8	2.1
W	0533	12.4	3.8
	1152	0.8	0.2
	1856	20.5	6.2
10	0123	6.5	2.0
Th	0620	12.2	3.7
	1234	1.6	0.5
	1933	20.0	6.1
11	0205	6.0	1.8
F	0710	12.3	3.7
	1320	2.5	0.8
	2009	19.5	5.9
12	0244	5.3	1.6
Sa	0803	12.6	3.8
	1405	3.5	1.1
	2041	19.0	5.8
13	0323	4.5	1.4
Su	0858	13.1	4.0
	1455	4.6	1.4
	2113	18.4	5.6
14	0358	3.5	1.1
M	0955	14.0	4.3
	1546	5.6	1.7
	2146	17.7	5.4
15	0436	2.5	0.8
Tu	1049	15.0	4.6
	1640	6.6	2.0
	2221	17.0	5.2
16	0513	1.4	0.4
W	1141	16.3	5.0
	1737	7.4	2.3
	2255	16.3	5.0
17	0554	0.3	0.1
Th	1236	17.6	5.4
	1833	8.0	2.4
	2334	15.8	4.8
18	0634	-0.7	-0.2
F	1327	19.0	5.8
	1927	8.3	2.5
19	0017	15.3	4.7
Sa	0717	-1.7	-0.5
	1418	20.2	6.2
	2023	8.3	2.5
20	0105	15.0	4.6
Su	0803	-2.5	-0.8
	1509	21.3	6.5
	2119	8.1	2.5
21	0157	14.9	4.5
M	0852	-3.1	-0.9
	1559	22.1	6.7
	2213	7.7	2.3
22	0256	14.9	4.5
Tu	0945	-3.4	-1.0
	1650	22.7	6.9
	2309	6.9	2.1
23	0355	15.0	4.6
W	1038	-3.2	-1.0
	1739	23.0	7.0
24	0001	5.7	1.7
Th	0504	15.2	4.6
	1137	-2.5	-0.8
	1829	23.0	7.0
25	0054	4.3	1.3
F	0613	15.5	4.7
	1233	-1.4	-0.4
	1918	22.7	6.9
26	0146	2.6	0.8
Sa	0723	16.1	4.9
	1335	0.1	0.0
	2004	22.1	6.7
27	0239	1.0	0.3
Su	0837	16.8	5.1
	1437	1.8	0.5
	2052	21.2	6.5
28	0330	-0.6	-0.2
M	0946	17.8	5.4
	1539	3.5	1.1
	2141	20.1	6.1
29	0420	-1.7	-0.5
Tu	1055	18.8	5.7
	1645	4.9	1.5
	2231	18.9	5.8
30	0511	-2.5	-0.8
W	1158	19.7	6.0
	1749	6.0	1.8
	2319	17.6	5.4
31	0603	-2.8	-0.9
Th	1300	20.4	6.2
	1852	6.8	2.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

ST. MICHAEL, ALASKA, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height	
	h m	ft	m
1	0736	-1.0	-0.3
Th	2234	5.7	1.7
2	0812	-1.0	-0.3
F	2323	5.4	1.6
3	0840	-0.8	-0.2
Sa			
4	0012	5.0	1.5
Su	0903	-0.6	-0.2
5	0057	4.4	1.3
M	0924	-0.3	-0.1
6	0139	3.7	1.1
Tu	0939	-0.1	0.0
	1709	2.7	0.8
	2055	2.4	0.7
7	0218	2.9	0.9
W	0948	0.2	0.1
	1734	3.2	1.0
8	0949	0.4	0.1
Th	1806	3.7	1.1
9	0948	0.5	0.2
F	1841	4.1	1.2
10	0932	0.6	0.2
Sa	1917	4.4	1.3
11	0532	0.3	0.1
Su	1952	4.5	1.4
12	0601	0.0	0.0
M	2032	4.6	1.4
13	0636	-0.2	-0.1
Tu	2110	4.6	1.4
14	0711	-0.4	-0.1
W	2145	4.6	1.4
15	0745	-0.4	-0.1
Th	2221	4.6	1.4

Day	Time	Height	
	h m	ft	m
16	0813	-0.4	-0.1
F	2253	4.5	1.4
17	0839	-0.4	-0.1
Sa	2324	4.3	1.3
18	0857	-0.2	-0.1
Su	2350	4.1	1.2
19	0905	0.0	0.0
M			
20	0011	3.7	1.1
Tu	0858	0.2	0.1
21	0036	3.3	1.0
W	0850	0.4	0.1
	1647	2.5	0.8
	1934	2.3	0.7
22	0048	2.8	0.9
Th	0843	0.5	0.2
	1648	2.9	0.9
23	0844	0.6	0.2
F	1659	3.5	1.1
24	0843	0.6	0.2
Sa	1727	4.0	1.2
25	0839	0.4	0.1
Su	1803	4.5	1.4
26	0551	0.2	0.1
M	1849	4.9	1.5
27	0548	-0.2	-0.1
Tu	1939	5.2	1.6
28	0614	-0.5	-0.2
W	2034	5.4	1.6
29	0642	-0.6	-0.2
Th	2130	5.3	1.6
30	0710	-0.6	-0.2
F	2225	5.1	1.6
31	0737	-0.5	-0.2
Sa	2318	4.7	1.4

FEBRUARY

Day	Time	Height	
	h m	ft	m
1	0756	-0.3	-0.1
Su			
2	0007	4.1	1.2
M	0810	0.0	0.0
	1455	2.2	0.7
	1756	1.9	0.6
3	0055	3.5	1.1
Tu	0821	0.3	0.1
	1521	2.7	0.8
	2012	2.0	0.6
4	0144	2.8	0.9
W	0830	0.5	0.2
	1549	3.2	1.0
	2232	1.8	0.5
5	0233	2.1	0.6
Th	0832	0.6	0.2
	1624	3.6	1.1
6	0045	1.4	0.4
F	0329	1.5	0.5
	0833	0.7	0.2
	1700	3.9	1.2
7	0232	0.9	0.3
Sa	0439	1.0	0.3
	0824	0.7	0.2
	1739	4.1	1.2
8	0351	0.6	0.2
Su	1822	4.2	1.3
9	0440	0.3	0.1
M	1908	4.3	1.3
10	0525	0.1	0.0
Tu	1953	4.3	1.3
11	0604	0.0	0.0
W	2034	4.3	1.3
12	0640	-0.1	0.0
Th	2120	4.2	1.3
13	0710	-0.1	0.0
F	2159	4.1	1.2
14	0730	0.0	0.0
Sa	2237	3.9	1.2
15	0747	0.2	0.1
Su	2312	3.7	1.1

Day	Time	Height	
	h m	ft	m
16	0751	0.4	0.1
M	2349	3.3	1.0
17	0741	0.6	0.2
Tu	1437	2.2	0.7
	1742	2.0	0.6
18	0026	2.9	0.9
W	0726	0.8	0.2
	1438	2.6	0.8
	1934	1.9	0.6
19	0102	2.4	0.7
Th	0721	0.9	0.3
	1452	3.1	0.9
	2119	1.6	0.5
20	0150	1.9	0.6
F	0719	0.9	0.3
	1518	3.5	1.1
	2336	1.2	0.4
21	0239	1.3	0.4
Sa	0724	0.8	0.2
	1546	4.0	1.2
22	0722	0.7	0.2
Su	1625	4.4	1.3
23	0318	0.4	0.1
M	1718	4.7	1.4
24	0410	0.1	0.0
Tu	1815	4.8	1.5
25	0451	-0.1	0.0
W	1914	4.8	1.5
26	0523	-0.2	-0.1
Th	2019	4.7	1.4
27	0549	-0.1	0.0
F	2121	4.4	1.3
28	0613	0.1	0.0
Sa	2220	4.1	1.2

MARCH

Day	Time	Height	
	h m	ft	m
1	0632	0.3	0.1
Su	1245	1.9	0.6
	1549	1.7	0.5
	2312	3.6	1.1
2	0643	0.5	0.2
M	1304	2.4	0.7
	1759	1.7	0.5
3	0011	3.0	0.9
Tu	0654	0.8	0.2
	1336	2.9	0.9
	1945	1.5	0.5
4	0111	2.5	0.8
W	0659	0.9	0.3
	1404	3.4	1.0
	2111	1.2	0.4
5	0209	2.0	0.6
Th	0700	1.1	0.3
	1439	3.7	1.1
	2236	1.0	0.3
6	0315	1.5	0.5
F	0703	1.1	0.3
	1515	3.9	1.2
	2356	0.8	0.2
7	0425	1.2	0.4
Sa	0700	1.1	0.3
	1551	4.0	1.2
8	0112	0.6	0.2
Su	1633	4.0	1.2
9	0278	0.5	0.2
M	1719	4.0	1.2
10	0333	0.4	0.1
Tu	1807	4.0	1.2
11	0426	0.3	0.1
W	1900	3.9	1.2
12	0507	0.3	0.1
Th	1949	3.7	1.1
13	0537	0.4	0.1
F	2044	3.6	1.1
14	0557	0.5	0.2
Sa	2136	3.4	1.0
15	0612	0.7	0.2
Su	2225	3.1	0.9

Day	Time	Height	
	h m	ft	m
16	0606	0.9	0.3
M	1227	2.2	0.7
	1630	1.8	0.5
	2317	2.7	0.8
17	0550	1.1	0.3
Tu	1231	2.6	0.8
	1813	1.6	0.5
18	0007	2.4	0.7
W	0538	1.3	0.4
	1246	3.0	0.9
	1936	1.3	0.4
19	0108	2.0	0.6
Th	0536	1.3	0.4
	1308	3.5	1.1
	2045	0.9	0.3
20	0213	1.6	0.5
F	0537	1.3	0.4
	1333	3.9	1.2
	2154	0.6	0.2
21	0327	1.2	0.4
Sa	0535	1.1	0.3
	1409	4.3	1.3
	2307	0.4	0.1
22	1451	4.5	1.4
Su			
23	0026	0.2	0.1
M	1540	4.6	1.4
24	0142	0.1	0.0
Tu	1637	4.6	1.4
25	0239	0.1	0.0
W	1739	4.4	1.3
26	0324	0.1	0.0
Th	1848	4.1	1.2
27	0400	0.3	0.1
F	2000	3.7	1.1
28	0425	0.5	0.2
Sa	1049	2.0	0.6
	1333	1.8	0.5
	2109	3.2	1.0
29	0439	0.8	0.2
Su	1104	2.5	0.8
	1624	1.7	0.5
	2219	2.7	0.8
30	0451	1.0	0.3
M	1133	3.0	0.9
	1812	1.3	0.4
	2334	2.3	0.7
31	0459	1.2	0.4
Tu	1158	3.4	1.0
	1924	0.9	0.3

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1 W	0043 0500 1230 2027	1.9 1.3 3.8 0.6	0.6 0.4 1.2 0.2	16 Th	0109 0309 1137 2015	1.5 1.4 4.1 0.2	0.5 0.4 1.2 0.1
2 Th	0153 0459 1301 2126	1.6 1.4 4.0 0.4	0.5 0.4 1.2 0.1	17 F	1205 2100	4.5 -0.1	1.4 0.0
3 F	1333 2218	4.1 0.2	1.2 0.1	18 Sa	1244 2152	4.8 -0.3	1.5 -0.1
4 Sa	1405 2310	4.2 0.2	1.3 0.1	19 Su	1327 2248	4.9 -0.3	1.5 -0.1
5 Su	1442	4.1	1.2	20 M	1412 2337	4.9 -0.3	1.5 -0.1
6 M	0009 1520	0.2 4.0	0.1 1.2	21 Tu	1503	4.7	1.4
7 Tu	0110 1602	0.3 3.8	0.1 1.2	22 W	0029 1600	-0.1 4.3	0.0 1.3
8 W	0205 1651	0.4 3.6	0.1 1.1	23 Th	0112 1703	0.1 3.7	0.0 1.1
9 Th	0251 1743	0.5 3.4	0.2 1.0	24 F	0144 1813	0.3 3.1	0.1 0.9
10 F	0323 1843	0.6 3.1	0.2 0.9	25 Sa	0206 0921 1445 1934	0.6 2.6 2.1 2.5	0.2 0.8 0.6 0.8
11 Sa	0341 1951	0.8 2.8	0.2 0.9	26 Su	0217 0943 1703 2112	0.9 3.1 1.5 1.9	0.3 0.9 0.5 0.6
12 Su	0342 1034 1525 2100	1.0 2.3 2.0 2.4	0.3 0.7 0.6 0.7	27 M	0225 1011 1815 2250	1.1 3.6 0.9 1.5	0.3 1.1 0.3 0.5
13 M	0327 1042 1731 2224	1.2 2.7 1.6 2.0	0.4 0.8 0.5 0.6	28 Tu	0224 1036 1904	1.2 4.0 0.4	0.4 1.2 0.1
14 Tu	0318 1053 1834 2342	1.4 3.2 1.1 1.7	0.4 1.0 0.3 0.5	29 W	1109 1953	4.3 0.1	1.3 0.0
15 W	0312 1112 1926	1.4 3.6 0.6	0.4 1.1 0.2	30 Th	1140 2035	4.4 -0.2	1.3 -0.1

MAY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1 F	1207 2117	4.5 -0.3	1.4 -0.1	16 Sa	1130 2101	5.3 -0.8	1.6 -0.2
2 Sa	1239 2159	4.5 -0.3	1.4 -0.1	17 Su	1214 2140	5.4 -0.8	1.6 -0.2
3 Su	1309 2241	4.4 -0.2	1.3 -0.1	18 M	1259 2222	5.2 -0.7	1.6 -0.2
4 M	1341 2323	4.3 -0.1	1.3 0.0	19 Tu	1347 2258	4.9 -0.5	1.5 -0.2
5 Tu	1411	4.1	1.2	20 W	1436 2330	4.4 -0.2	1.3 -0.1
6 W	0001 1443	0.1 3.8	0.0 1.2	21 Th	1518 2350	3.7 0.1	1.1 0.0
7 Th	0028 1506	0.3 3.5	0.1 1.1	22 F	0700 1611	2.4* 2.9	0.7* 0.9
8 F	0046 1521	0.5 3.0	0.2 0.9	23 Sa	0004 0800	0.4 3.0	0.1 0.9
9 Sa	0047 0700 1433	0.7 2.1* 2.6	0.2 0.6* 0.8	24 Su	0012 0822 1713 1913	0.6 3.6 1.3 1.4	0.2 1.1 0.4 0.4
10 Su	0048 0906	0.9 2.8	0.3 0.9	25 M	0010 0854 1758 2147 2348	0.8 4.0 0.7 0.9 0.8	0.2 1.2 0.2 0.3 0.2
11 M	0047 0907 1815 2045	1.0 3.2 1.3 1.4	0.3 1.0 0.4 0.4	26 Tu	0924 1839	4.4 0.1	1.3 0.0
12 Tu	0043 0925 1834	1.1 3.7 0.8	0.3 1.1 0.2	27 W	0956 1916	4.6 -0.2	1.4 -0.1
13 W	0947 1905	4.2 0.2	1.3 0.1	28 Th	1028 1954	4.7 -0.5	1.4 -0.2
14 Th	1016 1941	4.7 -0.2	1.4 -0.1	29 F	1100 2030	4.8 -0.6	1.5 -0.2
15 F	1051 2019	5.0 -0.6	1.5 -0.2	30 Sa	1129 2108	4.7 -0.6	1.4 -0.2
				31 Su	1159 2143	4.6 -0.5	1.4 -0.2

JUNE

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1 M	1225 2214	4.5 -0.4	1.4 -0.1	16 Tu	1246 2148	5.1 -0.7	1.6 -0.2
2 Tu	1253 2239	4.3 -0.2	1.3 -0.1	17 W	1329 2210	4.5 -0.4	1.4 -0.1
3 W	1318 2257	4.0 0.0	1.2 0.0	18 Th	1414 2225	3.8 -0.1	1.2 0.0
4 Th	1336 2301	3.7 0.2	1.1 0.1	19 F	0617 0913 1452 2236	2.6 2.5 2.9 0.2	0.8 0.8 0.9 0.1
5 F	1336 2259	3.3 0.4	1.0 0.1	20 Sa	0631 2241	3.2 0.4	1.0 0.1
6 Sa	0600 1306 2258	2.4* 2.8 0.5	0.7* 0.9 0.2	21 Su	0703 2235	3.8 0.5	1.2 0.2
7 Su	0740 2257	3.0 0.7	0.9 0.2	22 M	0735 2213	4.2 0.6	1.3 0.2
8 M	0744 2253	3.4 0.7	1.0 0.2	23 Tu	0814 1800	4.6 0.1	1.4 0.0
9 Tu	0801 1851	4.0 0.6	1.2 0.2	24 W	0846 1835	4.7 -0.2	1.4 -0.1
10 W	0829 1842	4.5 0.1	1.4 0.0	25 Th	0922 1910	4.8 -0.5	1.5 -0.2
11 Th	0903 1907	5.0 -0.4	1.5 -0.1	26 F	0957 1946	4.8 -0.6	1.5 -0.2
12 F	0942 1939	5.3 -0.8	1.6 -0.2	27 Sa	1033 2021	4.8 -0.6	1.5 -0.2
13 Sa	1024 2014	5.6 -1.0	1.7 -0.3	28 Su	1105 2052	4.7 -0.6	1.4 -0.2
14 Su	1110 2046	5.6 -1.0	1.7 -0.3	29 M	1131 2121	4.6 -0.5	1.4 -0.2
15 M	1157 2120	5.5 -0.9	1.7 -0.3	30 Tu	1202 2139	4.4 -0.3	1.3 -0.1

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1987

Times and Heights of High and Low Waters

JULY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	1221	4.1	1.2	16	1326	3.7	1.1
W	2147	-0.1	0.0	Th	2111	0.0	0.0
2	1239	3.8	1.2	17	0424	2.7	0.8
Th	2148	0.1	0.0	F	0831	2.2	0.7
					1412	2.9	0.9
					2119	0.2	0.1
3	1247	3.3	1.0	18	0453	3.3	1.0
F	2142	0.3	0.1	Sa	1143	2.0	0.6
					1454	2.1	0.6
					2123	0.4	0.1
4	0500	2.5*	0.8*	19	0532	3.8	1.2
Sa	1225	2.8	0.9	Su	2124	0.5	0.2
	2136	0.4	0.1				
5	0609	3.0	0.9	20	0607	4.2	1.3
Su	2136	0.5	0.2	M	2113	0.6	0.2
6	0615	3.4	1.0	21	0646	4.4	1.3
M	2136	0.5	0.2	Tu	1656	0.3	0.1
7	0635	4.0	1.2	22	0729	4.6	1.4
Tu	2120	0.5	0.2	W	1737	0.0	0.0
8	0707	4.5	1.4	23	0811	4.6	1.4
W	1824	0.1	0.0	Th	1815	-0.2	-0.1
9	0745	4.9	1.5	24	0854	4.6	1.4
Th	1830	-0.3	-0.1	F	1852	-0.3	-0.1
10	0829	5.3	1.6	25	0933	4.6	1.4
F	1855	-0.6	-0.2	Sa	1926	-0.4	-0.1
11	0919	5.5	1.7	26	1011	4.5	1.4
Sa	1926	-0.8	-0.2	Su	1956	-0.4	-0.1
12	1008	5.6	1.7	27	1046	4.4	1.3
Su	1952	-0.9	-0.3	M	2021	-0.3	-0.1
13	1100	5.4	1.6	28	1118	4.2	1.3
M	2020	-0.7	-0.2	Tu	2036	-0.1	0.0
14	1149	5.0	1.5	29	1147	3.9	1.2
Tu	2042	-0.5	-0.2	W	2048	0.1	0.0
15	1237	4.4	1.3	30	1212	3.5	1.1
W	2057	-0.3	-0.1	Th	2039	0.3	0.1
				31	1230	3.1	0.9
				F	2028	0.5	0.2

AUGUST

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0413	2.5	0.8	16	0347	3.8	1.2
Sa	0737	2.3	0.7	Su	1148	1.2	0.4
	1245	2.6	0.8		1529	1.5	0.5
	2022	0.6	0.2		2003	0.8	0.2
2	0417	2.9	0.9	17	0429	4.1	1.2
Su	2020	0.7	0.2	M	1328	0.8	0.2
					1648	1.0	0.3
					2003	0.8	0.2
3	0432	3.4	1.0	18	0509	4.2	1.3
M	2018	0.7	0.2	Tu	1454	0.5	0.2
4	0457	3.9	1.2	19	0555	4.3	1.3
Tu	2013	0.6	0.2	W	1602	0.3	0.1
5	0536	4.3	1.3	20	0640	4.3	1.3
W	1755	0.3	0.1	Th	1651	0.1	0.0
6	0618	4.7	1.4	21	0730	4.2	1.3
Th	1735	0.0	0.0	F	1737	0.0	0.0
7	0709	5.0	1.5	22	0821	4.2	1.3
F	1801	-0.3	-0.1	Sa	1814	0.0	0.0
8	0804	5.2	1.6	23	0907	4.1	1.2
Sa	1825	-0.5	-0.2	Su	1845	0.1	0.0
9	0903	5.2	1.6	24	0949	3.9	1.2
Su	1848	-0.4	-0.1	M	1911	0.2	0.1
10	0959	5.0	1.5	25	1031	3.7	1.1
M	1910	-0.3	-0.1	Tu	1926	0.4	0.1
11	1054	4.6	1.4	26	1109	3.4	1.0
Tu	1928	-0.1	0.0	W	1930	0.6	0.2
12	1147	4.1	1.2	27	1146	3.1	0.9
W	1939	0.2	0.1	Th	1918	0.8	0.2
13	0209	2.2	0.7	28	0203	2.3	0.7
Th	0546	1.8	0.5	F	0606	1.9	0.6
	1242	3.4	1.0		1223	2.7	0.8
	1947	0.4	0.1		1859	1.0	0.3
14	0234	2.8	0.9	29	0214	2.7	0.8
F	0752	1.7	0.5	Sa	0740	1.8	0.5
	1331	2.7	0.8		1309	2.2	0.7
	1957	0.6	0.2		1854	1.1	0.3
15	0308	3.3	1.0	30	0222	3.1	0.9
Sa	0954	1.5	0.5	Su	0912	1.5	0.5
	1430	2.1	0.6		1354	1.8	0.5
	2005	0.7	0.2		1855	1.1	0.3
				31	0245	3.5	1.1
				M	1052	1.2	0.4
					1453	1.3	0.4
					1852	1.0	0.3

SEPTEMBER

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0315	3.9	1.2	16	0406	4.2	1.3
Tu	1252	0.8	0.2	W	1341	0.3	0.1
	1616	0.9	0.3				
	1848	0.8	0.2				
2	0349	4.3	1.3	17	0452	4.1	1.2
W	1432	0.5	0.2	Th	1447	0.3	0.1
3	0438	4.5	1.4	18	0544	3.9	1.2
Th	1534	0.2	0.1	F	1543	0.3	0.1
4	0534	4.7	1.4	19	0636	3.7	1.1
F	1620	0.0	0.0	Sa	1629	0.4	0.1
5	0636	4.7	1.4	20	0735	3.6	1.1
Sa	1656	0.0	0.0	Su	1701	0.5	0.2
6	0742	4.6	1.4	21	0825	3.3	1.0
Su	1721	0.1	0.0	M	1727	0.7	0.2
7	0848	4.3	1.3	22	0923	3.1	0.9
M	1739	0.2	0.1	Tu	1741	0.9	0.3
8	0951	3.9	1.2	23	0009	2.1	0.6
Tu	1754	0.5	0.2	W	0306	2.0	0.6
	2359	2.0	0.6		1015	2.8	0.9
					1732	1.1	0.3
9	0340	1.6	0.5	24	0000	2.4	0.7
W	1056	3.4	1.0	Th	0525	1.8	0.5
	1806	0.7	0.2		1114	2.5	0.8
					1713	1.3	0.4
10	0024	2.6	0.8	25	0011	2.8	0.9
Th	0545	1.5	0.5	F	0643	1.5	0.5
	1155	2.9	0.9		1211	2.1	0.6
	1811	0.9	0.3		1701	1.4	0.4
11	0055	3.1	0.9	26	0026	3.1	0.9
F	0727	1.2	0.4	Sa	0743	1.1	0.3
	1257	2.3	0.7		1312	1.8	0.5
	1819	1.1	0.3		1659	1.4	0.4
12	0127	3.6	1.1	27	0042	3.5	1.1
Sa	0851	0.9	0.3	Su	0842	0.8	0.2
	1406	1.8	0.5		1421	1.5	0.5
	1824	1.2	0.4		1655	1.4	0.4
13	0206	3.9	1.2	28	0107	3.9	1.2
Su	1007	0.6	0.2	M	0938	0.5	0.2
	1512	1.5	0.5				
	1828	1.2	0.4				
14	0241	4.1	1.2	29	0134	4.3	1.3
M	1119	0.5	0.2	Tu	1037	0.3	0.1
15	0323	4.2	1.3	30	0213	4.5	1.4
Tu	1232	0.4	0.1	W	1145	0.1	0.0

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

ST. MICHAEL, ALASKA, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0301	4.6	1.4	16	0342	3.9	1.2
Th	1255	0.1	0.0	F	1327	0.3	0.1
2	0353	4.6	1.4	17	0424	3.6	1.1
F	1354	0.1	0.0	Sa	1408	0.4	0.1
3	0455	4.4	1.3	18	0513	3.3	1.0
Sa	1436	0.2	0.1	Su	1442	0.6	0.2
4	0601	4.0	1.2	19	0612	2.9	0.9
Su	1512	0.4	0.1	M	1457	0.9	0.3
					2000	2.0*	0.6*
5	0717	3.6	1.1	20	0721	2.5	0.8
M	1533	0.6	0.2	Tu	1451	1.1	0.3
	2212	2.0	0.6		2214	2.6	0.8
6	0109	1.9	0.6	21	0509	1.9	0.6
Tu	0833	3.1	0.9	W	0854	2.1	0.6
	1549	0.9	0.3		1437	1.2	0.4
	2223	2.6	0.8		2219	2.9	0.9
7	0414	1.6	0.5	22	0609	1.5	0.5
W	0948	2.5	0.8	Th	1018	1.8	0.5
	1557	1.1	0.3		1427	1.4	0.4
	2252	3.2	1.0		2233	3.3	1.0
8	0555	1.1	0.3	23	0651	1.0	0.3
Th	1112	2.1	0.6	F	1146	1.5	0.5
	1605	1.2	0.4		1422	1.4	0.4
	2324	3.7	1.1		2251	3.7	1.1
9	0711	0.7	0.2	24	0733	0.5	0.2
F	1230	1.7	0.5	Sa	2313	4.1	1.2
	1607	1.4	0.4				
	2359	4.1	1.2				
10	0810	0.3	0.1	25	0812	0.1	0.0
Sa	1357	1.5	0.5	Su	2342	4.5	1.4
	1608	1.4	0.4				
11	0031	4.3	1.3	26	0854	-0.1	0.0
Su	0905	0.0	0.0	M			
12	0107	4.4	1.3	27	0017	4.8	1.5
M	0955	-0.1	0.0	Tu	0936	-0.3	-0.1
13	0142	4.4	1.3	28	0053	4.9	1.5
Tu	1047	-0.1	0.0	W	1021	-0.4	-0.1
14	0220	4.3	1.3	29	0138	4.9	1.5
W	1142	0.0	0.0	Th	1107	-0.4	-0.1
15	0300	4.1	1.2	30	0226	4.7	1.4
Th	1234	0.1	0.0	F	1149	-0.2	-0.1
				31	0317	4.3	1.3
				Sa	1227	0.0	0.0

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0412	3.8	1.2	16	0233	3.0	0.9
Su	1257	0.3	0.1	M	1216	0.6	0.2
					2108	2.6	0.8
2	0518	3.1	0.9	17	0700	2.1*	0.6*
M	1314	0.5	0.2	Tu	1214	0.8	0.2
	2048	2.6	0.8		2045	2.9	0.9
3	0204	2.2	0.7	18	1210	0.9	0.3
Tu	0644	2.4	0.7	W	2051	3.3	1.0
	1325	0.8	0.2				
	2106	3.2	1.0				
4	0450	1.5	0.5	19	1200	1.0	0.3
W	0827	1.8	0.5	Th	2109	3.8	1.2
	1332	1.0	0.3				
	2135	3.8	1.2				
5	0558	0.8	0.2	20	0648	0.7	0.2
Th	1024	1.3	0.4	F	2131	4.2	1.3
	1331	1.1	0.3				
	2206	4.2	1.3				
6	0651	0.3	0.1	21	0706	0.2	0.1
F	2242	4.5	1.4	Sa	2159	4.6	1.4
7	0736	-0.1	0.0	22	0738	-0.3	-0.1
Sa	2314	4.7	1.4	Su	2228	5.0	1.5
8	0818	-0.4	-0.1	23	0810	-0.6	-0.2
Su	2349	4.8	1.5	M	2307	5.2	1.6
9	0900	-0.5	-0.2	24	0848	-0.8	-0.2
M				Tu	2349	5.3	1.6
10	0021	4.7	1.4	25	0924	-0.8	-0.2
Tu	0943	-0.5	-0.2	W			
11	0054	4.6	1.4	26	0032	5.2	1.6
W	1024	-0.4	-0.1	Th	0959	-0.7	-0.2
12	0126	4.4	1.3	27	0117	5.0	1.5
Th	1100	-0.2	-0.1	F	1031	-0.6	-0.2
13	0156	4.1	1.2	28	0202	4.5	1.4
F	1139	0.0	0.0	Sa	1056	-0.3	-0.1
14	0224	3.8	1.2	29	0245	3.8	1.2
Sa	1204	0.2	0.1	Su	1114	0.0	0.0
15	0246	3.4	1.0	30	0323	3.0	0.9
Su	1215	0.4	0.1	M	1127	0.3	0.1
					1930	3.0	0.9

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	1134	0.5	0.2	16	1033	0.6	0.2
Tu	1951	3.6	1.1	W	1929	3.5	1.1
2	1133	0.7	0.2	17	1030	0.7	0.2
W	2024	4.2	1.3	Th	1948	4.0	1.2
3	0545	0.6	0.2	18	0758	0.6	0.2
Th	0859	0.8	0.2	F	2010	4.4	1.3
	1113	0.7	0.2				
	2057	4.6	1.4				
4	0621	0.1	0.0	19	0642	0.1	0.0
F	2131	4.8	1.5	Sa	2045	4.8	1.5
5	0703	-0.3	-0.1	20	0701	-0.3	-0.1
Sa	2207	5.0	1.5	Su	2120	5.2	1.6
6	0738	-0.6	-0.2	21	0733	-0.7	-0.2
Su	2240	5.0	1.5	M	2203	5.4	1.6
7	0817	-0.7	-0.2	22	0803	-0.9	-0.3
M	2315	4.9	1.5	Tu	2246	5.5	1.7
8	0852	-0.7	-0.2	23	0834	-0.9	-0.3
Tu	2349	4.8	1.5	W	2334	5.4	1.6
9	0927	-0.6	-0.2	24	0903	-0.8	-0.2
W				Th			
10	0018	4.6	1.4	25	0019	5.1	1.6
Th	1000	-0.5	-0.2	F	0924	-0.6	-0.2
11	0047	4.3	1.3	26	0105	4.6	1.4
F	1022	-0.3	-0.1	Sa	0943	-0.4	-0.1
12	0109	4.0	1.2	27	0150	3.9	1.2
Sa	1037	-0.1	0.0	Su	0954	-0.1	0.0
					1737	2.6	0.8
					2031	2.4	0.7
13	0123	3.6	1.1	28	0230	3.0	0.9
Su	1041	0.2	0.1	M	1006	0.2	0.1
					1755	3.2	1.0
14	0116	3.2	1.0	29	1011	0.3	0.1
M	1038	0.4	0.1	Tu	1827	3.8	1.2
	1700	2.3*	0.7*				
15	0018	2.8	0.9	30	1009	0.5	0.2
Tu	1034	0.5	0.2	W	1904	4.3	1.3
	1921	3.1	0.9				
				31	1000	0.5	0.2
				Th	1940	4.6	1.4

Time meridian 135° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.
* Neither a high or low water but an intermediate value to show the period of an approximate stand.

HONOLULU, HAWAII, 1987

Times and Heights of High and Low Waters

JANUARY

Day	Time	Height	
	h m	ft	m
1	0519	2.6	0.8
Th	1250	0.0	0.0
	1725	0.6	0.2
	2224	-0.2	-0.1
2	0601	2.5	0.8
F	1329	0.0	0.0
	1823	0.6	0.2
	2317	0.0	0.0
3	0644	2.2	0.7
Sa	1409	0.0	0.0
	1933	0.7	0.2
4	0015	0.3	0.1
Su	0723	2.0	0.6
	1447	0.0	0.0
	2049	0.9	0.3
5	0121	0.5	0.2
M	0802	1.6	0.5
	1523	0.0	0.0
	2211	1.1	0.3
6	0259	0.7	0.2
Tu	0842	1.3	0.4
	1559	0.0	0.0
	2325	1.4	0.4
7	0510	0.8	0.2
W	0921	1.0	0.3
	1633	0.0	0.0
8	0024	1.6	0.5
Th	0727	0.7	0.2
	1021	0.8	0.2
	1713	0.0	0.0
9	0112	1.8	0.5
F	0849	0.5	0.2
	1136	0.6	0.2
	1752	0.0	0.0
10	0157	2.0	0.6
Sa	0941	0.4	0.1
	1245	0.5	0.2
	1830	-0.1	0.0
11	0232	2.1	0.6
Su	1013	0.3	0.1
	1345	0.5	0.2
	1912	-0.1	0.0
12	0306	2.2	0.7
M	1045	0.3	0.1
	1433	0.5	0.2
	1954	-0.1	0.0
13	0340	2.2	0.7
Tu	1114	0.2	0.1
	1514	0.5	0.2
	2030	-0.1	0.0
14	0411	2.3	0.7
W	1141	0.2	0.1
	1553	0.6	0.2
	2105	-0.1	0.0
15	0442	2.2	0.7
Th	1207	0.2	0.1
	1629	0.6	0.2
	2140	-0.1	0.0
16	0510	2.2	0.7
F	1233	0.2	0.1
	1707	0.6	0.2
	2212	0.0	0.0
17	0539	2.1	0.6
Sa	1256	0.1	0.0
	1751	0.7	0.2
	2254	0.1	0.0
18	0607	2.0	0.6
Su	1319	0.1	0.0
	1843	0.8	0.2
	2336	0.3	0.1
19	0636	1.8	0.5
M	1345	0.1	0.0
	1943	0.9	0.3
20	0036	0.5	0.2
Tu	0708	1.5	0.5
	1412	0.1	0.0
	2052	1.1	0.3
21	0153	0.7	0.2
W	0737	1.3	0.4
	1446	0.0	0.0
	2211	1.3	0.4
22	0359	0.8	0.2
Th	0818	1.0	0.3
	1525	0.0	0.0
	2321	1.6	0.5
23	0637	0.7	0.2
F	0917	0.8	0.2
	1615	-0.1	0.0
24	0023	1.9	0.6
Sa	0817	0.5	0.2
	1057	0.6	0.2
	1710	-0.1	0.0
25	0117	2.1	0.6
Su	0909	0.3	0.1
	1233	0.5	0.2
	1808	-0.2	-0.1
26	0208	2.4	0.7
M	0948	0.1	0.0
	1347	0.5	0.2
	1907	-0.3	-0.1
27	0255	2.5	0.8
Tu	1025	0.0	0.0
	1446	0.5	0.2
	1959	-0.3	-0.1
28	0337	2.6	0.8
W	1058	0.0	0.0
	1537	0.6	0.2
	2051	-0.3	-0.1
29	0419	2.5	0.8
Th	1133	-0.1	0.0
	1625	0.7	0.2
	2140	-0.2	-0.1
30	0458	2.4	0.7
F	1205	-0.1	0.0
	1713	0.8	0.2
	2232	-0.1	0.0
31	0533	2.2	0.7
Sa	1234	-0.1	0.0
	1806	1.0	0.3
	2321	0.1	0.0

FEBRUARY

Day	Time	Height	
	h m	ft	m
1	0607	1.9	0.6
Su	1303	0.0	0.0
	1858	1.1	0.3
2	0015	0.3	0.1
M	0639	1.6	0.5
	1333	0.0	0.0
	1957	1.2	0.4
3	0124	0.5	0.2
Tu	0711	1.3	0.4
	1401	0.0	0.0
	2109	1.3	0.4
4	0257	0.7	0.2
W	0736	1.0	0.3
	1434	0.0	0.0
	2222	1.5	0.5
5	0531	0.7	0.2
Th	0748	0.8	0.2
	1513	0.0	0.0
	2336	1.6	0.5
6	1607	0.1	0.0
F			
7	0036	1.8	0.5
Sa	1706	0.1	0.0
8	0126	1.9	0.6
Su	0933	0.3	0.1
	1251	0.5	0.2
	1808	0.0	0.0
9	0208	2.0	0.6
M	0954	0.3	0.1
	1350	0.5	0.2
	1900	0.0	0.0
10	0244	2.1	0.6
Tu	1013	0.2	0.1
	1431	0.6	0.2
	1942	0.0	0.0
11	0317	2.1	0.6
W	1031	0.2	0.1
	1508	0.7	0.2
	2024	-0.1	0.0
12	0345	2.1	0.6
Th	1053	0.1	0.0
	1540	0.7	0.2
	2103	-0.1	0.0
13	0414	2.1	0.6
F	1114	0.1	0.0
	1615	0.8	0.2
	2139	0.0	0.0
14	0439	2.0	0.6
Sa	1133	0.1	0.0
	1651	0.9	0.3
	2217	0.0	0.0
15	0506	1.9	0.6
Su	1151	0.1	0.0
	1730	1.1	0.3
	2302	0.2	0.1
16	0533	1.7	0.5
M	1213	0.0	0.0
	1815	1.2	0.4
	2348	0.3	0.1
17	0557	1.5	0.5
Tu	1236	0.0	0.0
	1908	1.3	0.4
18	0050	0.5	0.2
W	0625	1.2	0.4
	1302	0.0	0.0
	2009	1.4	0.4
19	0215	0.6	0.2
Th	0654	1.0	0.3
	1337	0.0	0.0
	2119	1.6	0.5
20	0436	0.6	0.2
F	0722	0.7	0.2
	1420	0.0	0.0
	2242	1.7	0.5
21	1523	0.0	0.0
Sa	2356	1.9	0.6
22	0821	0.3	0.1
Su	1115	0.4	0.1
	1640	0.0	0.0
23	0057	2.1	0.6
M	0853	0.2	0.1
	1254	0.4	0.1
	1800	-0.1	0.0
24	0148	2.3	0.7
Tu	0922	0.1	0.0
	1359	0.6	0.2
	1906	-0.1	0.0
25	0235	2.3	0.7
W	0951	0.0	0.0
	1448	0.7	0.2
	2004	-0.2	-0.1
26	0317	2.3	0.7
Th	1019	-0.1	0.0
	1530	0.9	0.3
	2056	-0.2	-0.1
27	0353	2.2	0.7
F	1045	-0.1	0.0
	1613	1.1	0.3
	2145	-0.1	0.0
28	0431	2.0	0.6
Sa	1109	-0.1	0.0
	1655	1.2	0.4
	2237	0.0	0.0

MARCH

Day	Time	Height	
	h m	ft	m
1	0503	1.8	0.5
Su	1135	-0.1	0.0
	1740	1.4	0.4
	2326	0.2	0.1
2	0532	1.5	0.5
M	1158	-0.1	0.0
	1825	1.5	0.5
3	0023	0.3	0.1
Tu	0600	1.3	0.4
	1221	0.0	0.0
	1914	1.5	0.5
4	0127	0.5	0.2
W	0625	1.0	0.3
	1245	0.0	0.0
	2010	1.5	0.5
5	0303	0.6	0.2
Th	0644	0.8	0.2
	1316	0.1	0.0
	2119	1.6	0.5
6	1350	0.1	0.0
F	2234	1.6	0.5
7	1457	0.2	0.1
Sa	2347	1.7	0.5
8	0829	0.3	0.1
Su	1136	0.4	0.1
	1623	0.2	0.1
9	0045	1.8	0.5
M	0844	0.3	0.1
	1254	0.5	0.2
	1744	0.2	0.1
10	0130	1.9	0.6
Tu	0901	0.2	0.1
	1343	0.6	0.2
	1841	0.1	0.0
11	0208	1.9	0.6
W	0917	0.2	0.1
	1418	0.7	0.2
	1930	0.1	0.0
12	0240	1.9	0.6
Th	0939	0.1	0.0
	1453	0.9	0.3
	2016	0.0	0.0
13	0309	1.9	0.6
F	0954	0.1	0.0
	1525	1.0	0.3
	2058	0.0	0.0
14	0337	1.8	0.5
Sa	1012	0.0	0.0
	1557	1.2	0.4
	2140	0.1	0.0
15	0406	1.7	0.5
Su	1030	0.0	0.0
	1632	1.4	0.4
	2225	0.1	0.0
16	0431	1.5	0.5
M	1050	-0.1	0.0
	1711	1.5	0.5
	2312	0.2	0.1
17	0459	1.3	0.4
Tu	1112	-0.1	0.0
	1753	1.6	0.5
18	0009	0.3	0.1
W	0524	1.1	0.3
	1134	-0.1	0.0
	1839	1.7	0.5
19	0118	0.4	0.1
Th	0556	0.9	0.3
	1205	-0.1	0.0
	1938	1.8	0.5
20	0254	0.5	0.2
F	0628	0.7	0.2
	1242	0.0	0.0
	2047	1.8	0.5
21	0518	0.4	0.1
Sa	0720	0.5	0.2
	1329	0.0	0.0
	2206	1.9	0.6
22	0657	0.3	0.1
Su	0951	0.4	0.1
	1449	0.1	0.0
	2323	1.9	0.6
23	0736	0.2	0.1
M	1200	0.4	0.1
	1631	0.1	0.0
24	0027	2.0	0.6
Tu	0808	0.1	0.0
	1309	0.6	0.2
	1758	0.1	0.0
25	0121	2.1	0.6
W	0835	0.0	0.0
	1358	0.8	0.2
	1907	0.1	0.0
26	0206	2.0	0.6
Th	0901	-0.1	0.0
	1442	1.0	0.3
	2007	0.0	0.0
27	0245	1.9	0.6
F	0927	-0.1	0.0
	1521	1.3	0.4
	2101	0.0	0.0
28	0324	1.7	0.5
Sa	0950	-0.1	0.0
	1600	1.5	0.5
	2154	0.1	0.0
29	0356	1.5	0.5
Su	1012	-0.1	0.0
	1639	1.6	0.5
	2245	0.2	0.1
30	0424	1.3	0.4
M	1031	-0.1	0.0
	1718	1.7	0.5
	2337	0.2	0.1
31	0453	1.1	0.3
Tu	1053	-0.1	0.0
	1753	1.8	0.5

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HONOLULU, HAWAII, 1987

Times and Heights of High and Low Waters

APRIL

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0034	0.3	0.1	16	0036	0.3	0.1
W	0521	0.9	0.3	Th	0506	0.7	0.2
	1115	-0.1	0.0		1048	-0.2	-0.1
	1835	1.8	0.5		1823	2.1	0.6
2	0140	0.4	0.1	17	0150	0.3	0.1
Th	0546	0.7	0.2	F	0545	0.5	0.2
	1140	0.0	0.0		1121	-0.1	0.0
	1924	1.8	0.5		1919	2.1	0.6
3	0311	0.5	0.2	18	0323	0.3	0.1
F	0611	0.6	0.2	Sa	0643	0.4	0.1
	1205	0.1	0.0		1205	0.0	0.0
	2022	1.7	0.5		2024	2.0	0.6
4	1244	0.2	0.1	19	0459	0.2	0.1
Sa	2131	1.7	0.5	Su	0828	0.3	0.1
					1300	0.1	0.0
					2136	2.0	0.6
5	0646	0.3	0.1	20	0558	0.1	0.0
Su	0924	0.4	0.1	M	1045	0.4	0.1
	1351	0.3	0.1		1436	0.2	0.1
	2243	1.7	0.5		2245	1.9	0.6
6	0712	0.3	0.1	21	0640	0.0	0.0
M	1143	0.5	0.2	Tu	1211	0.6	0.2
	1534	0.3	0.1		1627	0.3	0.1
	2345	1.7	0.5		2349	1.8	0.5
7	0733	0.2	0.1	22	0712	0.0	0.0
Tu	1245	0.6	0.2	W	1306	0.9	0.3
	1707	0.3	0.1		1800	0.3	0.1
8	0033	1.7	0.5	23	0042	1.7	0.5
W	0755	0.1	0.0	Th	0739	-0.1	0.0
	1324	0.8	0.2		1349	1.1	0.3
	1821	0.3	0.1		1915	0.3	0.1
9	0115	1.7	0.5	24	0127	1.6	0.5
Th	0815	0.1	0.0	F	0805	-0.1	0.0
	1356	1.0	0.3		1431	1.4	0.4
	1918	0.2	0.1		2021	0.3	0.1
10	0151	1.7	0.5	25	0207	1.4	0.4
F	0832	0.0	0.0	Sa	0831	-0.2	-0.1
	1430	1.2	0.4		1506	1.6	0.5
	2010	0.2	0.1		2115	0.2	0.1
11	0223	1.6	0.5	26	0244	1.2	0.4
Sa	0851	0.0	0.0	Su	0852	-0.2	-0.1
	1503	1.4	0.4		1542	1.8	0.5
	2100	0.2	0.1		2211	0.2	0.1
12	0255	1.4	0.4	27	0318	1.0	0.3
Su	0909	-0.1	0.0	M	0914	-0.2	-0.1
	1538	1.6	0.5		1617	2.0	0.6
	2147	0.2	0.1		2303	0.2	0.1
13	0327	1.3	0.4	28	0350	0.8	0.2
M	0930	-0.1	0.0	Tu	0936	-0.2	-0.1
	1613	1.8	0.5		1652	2.0	0.6
	2239	0.2	0.1		2355	0.3	0.1
14	0358	1.1	0.3	29	0421	0.7	0.2
Tu	0952	-0.2	-0.1	W	0958	-0.1	0.0
	1649	2.0	0.6		1728	2.0	0.6
	2333	0.2	0.1				
15	0430	0.9	0.3	30	0051	0.3	0.1
W	1017	-0.2	-0.1	Th	0452	0.6	0.2
	1734	2.1	0.6		1022	-0.1	0.0
					1809	2.0	0.6

MAY

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0150	0.3	0.1	16	0204	0.1	0.0
F	0527	0.5	0.2	Sa	0557	0.4	0.1
	1050	0.0	0.0		1101	-0.1	0.0
	1852	1.9	0.6		1905	2.3	0.7
2	0306	0.3	0.1	17	0311	0.1	0.0
Sa	0609	0.4	0.1	Su	0716	0.3	0.1
	1124	0.1	0.0		1153	0.0	0.0
	1941	1.8	0.5		2001	2.1	0.6
3	0415	0.3	0.1	18	0410	0.0	0.0
Su	0732	0.4	0.1	M	0901	0.4	0.1
	1159	0.2	0.1		1258	0.2	0.1
	2035	1.8	0.5		2102	2.0	0.6
4	0515	0.2	0.1	19	0500	0.0	0.0
M	0931	0.4	0.1	Tu	1043	0.6	0.2
	1258	0.3	0.1		1431	0.4	0.1
	2134	1.7	0.5		2201	1.8	0.5
5	0551	0.2	0.1	20	0539	-0.1	0.0
Tu	1121	0.5	0.2	W	1159	0.9	0.3
	1438	0.4	0.1		1624	0.5	0.2
	2230	1.6	0.5		2257	1.6	0.5
6	0617	0.1	0.0	21	0611	-0.1	0.0
W	1213	0.7	0.2	Th	1251	1.2	0.4
	1622	0.5	0.2		1808	0.6	0.2
	2324	1.5	0.5		2352	1.4	0.4
7	0643	0.1	0.0	22	0643	-0.2	-0.1
Th	1255	1.0	0.3	F	1334	1.5	0.5
	1752	0.5	0.2		1929	0.5	0.2
8	0009	1.5	0.5	23	0039	1.2	0.4
F	0704	0.0	0.0	Sa	0709	-0.2	-0.1
	1330	1.2	0.4		1415	1.7	0.5
	1904	0.4	0.1		2038	0.4	0.1
9	0051	1.3	0.4	24	0125	1.0	0.3
Sa	0723	-0.1	0.0	Su	0736	-0.2	-0.1
	1406	1.5	0.5		1450	1.9	0.6
	2008	0.4	0.1		2140	0.4	0.1
10	0133	1.2	0.4	25	0205	0.8	0.2
Su	0747	-0.1	0.0	M	0801	-0.2	-0.1
	1441	1.8	0.5		1525	2.1	0.6
	2106	0.3	0.1		2233	0.3	0.1
11	0212	1.0	0.3	26	0247	0.7	0.2
M	0810	-0.2	-0.1	Tu	0826	-0.2	-0.1
	1516	2.0	0.6		1601	2.2	0.7
	2201	0.2	0.1		2325	0.3	0.1
12	0247	0.9	0.3	27	0323	0.6	0.2
Tu	0839	-0.3	-0.1	W	0851	-0.2	-0.1
	1555	2.2	0.7		1636	2.2	0.7
	2257	0.2	0.1				
13	0329	0.7	0.2	28	0010	0.2	0.1
W	0908	-0.3	-0.1	Th	0358	0.5	0.2
	1637	2.3	0.7		0919	-0.1	0.0
	2357	0.1	0.0		1709	2.2	0.7
14	0409	0.6	0.2	29	0055	0.2	0.1
Th	0943	-0.3	-0.1	F	0437	0.4	0.1
	1722	2.4	0.7		0951	-0.1	0.0
					1746	2.1	0.6
15	0058	0.1	0.0	30	0145	0.2	0.1
F	0500	0.5	0.2	Sa	0522	0.4	0.1
	1018	-0.2	-0.1		1023	0.0	0.0
	1811	2.3	0.7		1825	2.1	0.6
				31	0230	0.2	0.1
				Su	0615	0.4	0.1
					1058	0.1	0.0
					1903	2.0	0.6

JUNE

Day	Time	Height		Day	Time	Height	
	h m	ft	m		h m	ft	m
1	0315	0.2	0.1	16	0317	0.0	0.0
M	0726	0.4	0.1	Tu	0847	0.7	0.2
	1132	0.2	0.1		1303	0.3	0.1
	1948	1.9	0.6		2023	1.9	0.6
2	0354	0.2	0.1	17	0356	0.0	0.0
Tu	0859	0.5	0.2	W	1018	0.9	0.3
	1236	0.4	0.1		1433	0.6	0.2
	2033	1.7	0.5		2112	1.6	0.5
3	0428	0.1	0.0	18	0434	-0.1	0.0
W	1024	0.7	0.2	Th	1124	1.2	0.4
	1355	0.5	0.2		1624	0.7	0.2
	2115	1.6	0.5		2158	1.3	0.4
4	0457	0.1	0.0	19	0508	-0.1	0.0
Th	1127	0.9	0.3	F	1222	1.5	0.5
	1542	0.7	0.2		1821	0.7	0.2
	2204	1.4	0.4		2254	1.1	0.3
5	0523	0.0	0.0	20	0542	-0.1	0.0
F	1216	1.2	0.4	Sa	1314	1.7	0.5
	1731	0.7	0.2		1954	0.6	0.2
	2257	1.2	0.4		2347	0.9	0.3
6	0551	0.0	0.0	21	0614	-0.1	0.0
Sa	1256	1.5	0.5	Su	1357	1.9	0.6
	1901	0.6	0.2		2107	0.5	0.2
	2346	1.0	0.3				
7	0621	-0.1	0.0	22	0045	0.7	0.2
Su	1337	1.8	0.5	M	0646	-0.1	0.0
	2015	0.5	0.2		1436	2.1	0.6
					2206	0.4	0.1
8	0041	0.9	0.3	23	0133	0.6	0.2
M	0648	-0.2	-0.1	Tu	0718	-0.1	0.0
	1419	2.0	0.6		1511	2.2	0.7
	2121	0.4	0.1		2251	0.3	0.1
9	0130	0.7	0.2	24	0226	0.5	0.2
Tu	0725	-0.3	-0.1	W	0752	-0.1	0.0
	1500	2.3	0.7		1546	2.3	0.7
	2221	0.2	0.1		2330	0.3	0.1
10	0218	0.6	0.2	25	0308	0.5	0.2
W	0801	-0.3	-0.1	Th	0827	-0.1	0.0
	1543	2.5	0.8		1621	2.3	0.7
	2312	0.1	0.0				
11	0314	0.5	0.2	26	0002	0.2	0.1
Th	0839	-0.3	-0.1	F	0350	0.5	0.2
	1625	2.6	0.8		0901	-0.1	0.0
					1653	2.3	0.7
12	0005	0.1	0.0	27	0036	0.2	0.1
F	0406	0.4	0.1	Sa	0429	0.5	0.2
	0924	-0.3	-0.1		0936	0.0	0.0
	1712	2.6	0.8		1725	2.2	0.7
13	0054	0.0	0.0	28	0108	0.2	0.1
Sa	0503	0.4	0.1	Su	0515	0.5	0.2
	1006	-0.2	-0.1		1011	0.0	0.0
	1758	2.5	0.8		1757	2.2	0.7
14	0143	0.0	0.0	29	0137	0.2	0.1
Su	0606	0.4	0.1	M	0605	0.5	0.2
	1059	-0.1	0.0		1046	0.1	0.0
	1847	2.4	0.7		1830	2.1	0.6
15	0232	0.0	0.0	30	0209	0.2	0.1
M	0726	0.5	0.2	Tu	0700	0.6	0.2
	1154	0.1	0.0		1130	0.3	0.1
	1934	2.2	0.7		1902	1.9	0.6

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HONOLULU, HAWAII, 1987

Times and Heights of High and Low Waters

JULY

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0238	0.2	0.1	16	0249	0.0	0.0
W	0808	0.7	0.2	Th	0929	1.2	0.4
	1224	0.5	0.2		1431	0.7	0.2
	1937	1.7	0.5		2017	1.4	0.4
2	0305	0.1	0.0	17	0325	0.0	0.0
Th	0918	0.9	0.3	F	1044	1.5	0.5
	1337	0.6	0.2		1633	0.8	0.2
	2012	1.5	0.5		2059	1.1	0.3
3	0335	0.1	0.0	18	0402	0.0	0.0
F	1028	1.1	0.3	Sa	1147	1.7	0.5
	1518	0.8	0.2		1850	0.8	0.2
	2051	1.3	0.4		2151	0.9	0.3
4	0407	0.0	0.0	19	0440	0.0	0.0
Sa	1130	1.4	0.4	Su	1245	1.9	0.6
	1723	0.8	0.2		2036	0.6	0.2
	2140	1.1	0.3		2303	0.7	0.2
5	0443	0.0	0.0	20	0526	0.0	0.0
Su	1225	1.7	0.5	M	1333	2.1	0.6
	1915	0.7	0.2		2132	0.5	0.2
	2242	0.8	0.2				
6	0521	-0.1	0.0	21	0025	0.6	0.2
M	1311	2.0	0.6	Tu	0611	0.0	0.0
	2038	0.5	0.2		1415	2.2	0.7
	2358	0.7	0.2		2206	0.4	0.1
7	0604	-0.2	-0.1	22	0131	0.6	0.2
Tu	1359	2.3	0.7	W	0656	0.0	0.0
	2137	0.4	0.1		1452	2.3	0.7
					2235	0.3	0.1
8	0109	0.6	0.2	23	0223	0.6	0.2
W	0653	-0.2	-0.1	Th	0738	0.0	0.0
	1444	2.5	0.8		1527	2.3	0.7
	2222	0.2	0.1		2301	0.3	0.1
9	0213	0.5	0.2	24	0304	0.6	0.2
Th	0741	-0.3	-0.1	F	0817	0.0	0.0
	1529	2.6	0.8		1600	2.3	0.7
	2304	0.1	0.0		2325	0.3	0.1
10	0309	0.5	0.2	25	0343	0.7	0.2
F	0830	-0.3	-0.1	Sa	0855	0.0	0.0
	1613	2.7	0.8		1630	2.3	0.7
	2343	0.1	0.0		2351	0.3	0.1
11	0405	0.6	0.2	26	0419	0.7	0.2
Sa	0919	-0.3	-0.1	Su	0931	0.1	0.0
	1658	2.6	0.8		1657	2.2	0.7
12	0025	0.0	0.0	27	0013	0.3	0.1
Su	0502	0.6	0.2	M	0500	0.8	0.2
	1011	-0.2	-0.1		1009	0.1	0.0
	1741	2.5	0.8		1726	2.1	0.6
13	0100	0.0	0.0	28	0034	0.2	0.1
M	0558	0.7	0.2	Tu	0541	0.9	0.3
	1101	0.0	0.0		1048	0.3	0.1
	1820	2.3	0.7		1751	2.0	0.6
14	0139	0.0	0.0	29	0100	0.2	0.1
Tu	0704	0.9	0.3	W	0627	1.0	0.3
	1159	0.2	0.1		1130	0.4	0.1
	1902	2.0	0.6		1819	1.8	0.5
15	0214	0.0	0.0	30	0121	0.2	0.1
W	0813	1.0	0.3	Th	0719	1.1	0.3
	1305	0.5	0.2		1223	0.6	0.2
	1941	1.7	0.5		1848	1.6	0.5
				31	0147	0.2	0.1
				F	0822	1.3	0.4
					1335	0.8	0.2
					1916	1.4	0.4

AUGUST

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0216	0.2	0.1	16	0249	0.2	0.1
Sa	0932	1.4	0.4	Su	1104	1.8	0.5
	1521	0.9	0.3				
	1948	1.1	0.3				
2	0251	0.1	0.0	17	0339	0.2	0.1
Su	1043	1.7	0.5	M	1212	2.0	0.6
	1753	0.8	0.2		2048	0.5	0.2
	2030	0.9	0.3		2304	0.6	0.2
3	0337	0.1	0.0	18	0443	0.3	0.1
M	1150	1.9	0.6	Tu	1304	2.1	0.6
	1954	0.6	0.2		2106	0.5	0.2
	2203	0.7	0.2				
4	0436	0.0	0.0	19	0040	0.6	0.2
Tu	1249	2.2	0.7	W	0548	0.2	0.1
	2046	0.5	0.2		1349	2.2	0.7
	2353	0.6	0.2		2128	0.4	0.1
5	0536	0.0	0.0	20	0138	0.7	0.2
W	1340	2.4	0.7	Th	0645	0.2	0.1
	2125	0.3	0.1		1427	2.2	0.7
					2150	0.4	0.1
6	0112	0.6	0.2	21	0219	0.8	0.2
Th	0637	-0.1	0.0	F	0730	0.2	0.1
	1427	2.5	0.8		1500	2.3	0.7
	2200	0.2	0.1		2211	0.4	0.1
7	0216	0.7	0.2	22	0256	0.9	0.3
F	0736	-0.1	0.0	Sa	0811	0.2	0.1
	1512	2.6	0.8		1529	2.2	0.7
	2232	0.2	0.1		2232	0.3	0.1
8	0309	0.8	0.2	23	0330	1.0	0.3
Sa	0828	-0.1	0.0	Su	0853	0.2	0.1
	1555	2.6	0.8		1557	2.2	0.7
	2304	0.1	0.0		2252	0.3	0.1
9	0400	0.9	0.3	24	0403	1.1	0.3
Su	0921	-0.1	0.0	M	0929	0.2	0.1
	1634	2.5	0.8		1622	2.1	0.6
	2336	0.1	0.0		2309	0.3	0.1
10	0449	1.0	0.3	25	0437	1.2	0.4
M	1013	0.0	0.0	Tu	1007	0.3	0.1
	1713	2.3	0.7		1648	2.0	0.6
					2328	0.3	0.1
11	0007	0.1	0.0	26	0513	1.3	0.4
Tu	0539	1.2	0.4	W	1049	0.4	0.1
	1105	0.2	0.1		1713	1.8	0.5
	1749	2.1	0.6		2346	0.2	0.1
12	0036	0.1	0.0	27	0555	1.4	0.4
W	0635	1.3	0.4	Th	1135	0.5	0.2
	1204	0.4	0.1		1737	1.6	0.5
	1823	1.8	0.5				
13	0105	0.1	0.0	28	0009	0.2	0.1
Th	0733	1.5	0.5	F	0641	1.6	0.5
	1313	0.6	0.2		1234	0.7	0.2
	1855	1.5	0.5		1805	1.4	0.4
14	0135	0.1	0.0	29	0031	0.2	0.1
F	0838	1.6	0.5	Sa	0737	1.7	0.5
	1441	0.8	0.2		1352	0.8	0.2
	1923	1.2	0.4		1831	1.2	0.4
15	0206	0.2	0.1	30	0103	0.2	0.1
Sa	0948	1.7	0.5	Su	0845	1.8	0.5
	1702	0.8	0.2		1555	0.8	0.2
	1948	0.9	0.3		1902	0.9	0.3
				31	0145	0.2	0.1
				M	1002	1.9	0.6

SEPTEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0245	0.2	0.1	16	0403	0.5	0.2
Tu	1117	2.1	0.6	W	1221	2.0	0.6
	1948	0.5	0.2		2014	0.5	0.2
	2236	0.6	0.2				
2	0403	0.2	0.1	17	0048	0.8	0.2
W	1223	2.2	0.7	Th	0529	0.5	0.2
	2023	0.4	0.1		1307	2.1	0.6
					2035	0.4	0.1
3	0024	0.7	0.2	18	0133	0.9	0.3
Th	0526	0.2	0.1	F	0628	0.4	0.1
	1317	2.4	0.7		1346	2.1	0.6
	2049	0.3	0.1		2057	0.4	0.1
4	0130	0.8	0.2	19	0205	1.0	0.3
F	0635	0.1	0.0	Sa	0721	0.4	0.1
	1405	2.5	0.8		1420	2.1	0.6
	2117	0.2	0.1		2112	0.3	0.1
5	0221	1.0	0.3	20	0237	1.2	0.4
Sa	0738	0.1	0.0	Su	0807	0.3	0.1
	1448	2.5	0.8		1449	2.0	0.6
	2146	0.2	0.1		2130	0.3	0.1
6	0307	1.2	0.4	21	0309	1.3	0.4
Su	0833	0.1	0.0	M	0848	0.3	0.1
	1527	2.4	0.7		1517	1.9	0.6
	2214	0.1	0.0		2148	0.3	0.1
7	0349	1.4	0.4	22	0341	1.5	0.5
M	0925	0.1	0.0	Tu	0930	0.4	0.1
	1603	2.2	0.7		1542	1.8	0.5
	2239	0.1	0.0		2204	0.2	0.1
8	0431	1.5	0.5	23	0413	1.7	0.5
Tu	1018	0.2	0.1	W	1012	0.4	0.1
	1640	2.0	0.6		1611	1.6	0.5
	2304	0.1	0.0		2224	0.2	0.1
9	0517	1.7	0.5	24	0448	1.8	0.5
W	1113	0.4	0.1	Th	1101	0.5	0.2
	1712	1.7	0.5		1636	1.5	0.5
	2330	0.1	0.0		2242	0.2	0.1
10	0604	1.8	0.5	25	0530	1.9	0.6
Th	1213	0.5	0.2	F	1154	0.6	0.2
	1740	1.4	0.4		1701	1.3	0.4
	2357	0.2	0.1		2306	0.2	0.1
11	0651	1.9	0.6	26	0612	2.0	0.6
F	1323	0.7	0.2	Sa	1255	0.7	0.2
	1812	1.2	0.4		1730	1.1	0.3
					2332	0.2	0.1
12	0021	0.2	0.1	27	0708	2.0	0.6
Sa	0750	1.9	0.6	Su	1427	0.7	0.2
	1459	0.8	0.2		1802	0.9	0.3
	1834	0.9	0.3				
13	0052	0.3	0.1	28	0004	0.2	0.1
Su	0856	1.9	0.6	M	0810	2.1	0.6
					1637	0.6	0.2
					1847	0.7	0.2
14	0129	0.4	0.1	29	0052	0.3	0.1
M	1009	1.9	0.6	Tu	0928	2.1	0.6
					1824	0.5	0.2
					2111	0.6	0.2
15	0234	0.4	0.1	30	0205	0.4	0.1
Tu	1123	2.0	0.6	W	1044	2.1	0.6
	1952	0.5	0.2		1906	0.4	0.1
	2342	0.7	0.2		2330	0.7	0.2

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

HONOLULU, HAWAII, 1987

Times and Heights of High and Low Waters

OCTOBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0348	0.4	0.1	16	0036	0.9	0.3
Th	1150	2.2	0.7	F	0454	0.6	0.2
	1938	0.3	0.1		1210	1.9	0.6
					1930	0.3	0.1
2	0042	0.8	0.2	17	0118	1.1	0.3
F	0524	0.4	0.1	Sa	0606	0.6	0.2
	1245	2.2	0.7		1253	1.9	0.6
	2003	0.2	0.1		1951	0.3	0.1
3	0131	1.1	0.3	18	0146	1.3	0.4
Sa	0640	0.4	0.1	Su	0709	0.5	0.2
	1333	2.2	0.7		1331	1.8	0.5
	2031	0.1	0.0		2009	0.2	0.1
4	0217	1.3	0.4	19	0218	1.5	0.5
Su	0742	0.3	0.1	M	0759	0.5	0.2
	1415	2.1	0.6		1403	1.7	0.5
	2053	0.1	0.0		2027	0.2	0.1
5	0257	1.6	0.5	20	0250	1.7	0.5
M	0842	0.3	0.1	Tu	0847	0.5	0.2
	1454	1.9	0.6		1435	1.6	0.5
	2119	0.1	0.0		2045	0.1	0.0
6	0336	1.8	0.5	21	0321	1.9	0.6
Tu	0937	0.3	0.1	W	0937	0.4	0.1
	1532	1.7	0.5		1503	1.4	0.4
	2142	0.1	0.0		2107	0.1	0.0
7	0415	2.0	0.6	22	0353	2.1	0.6
W	1031	0.4	0.1	Th	1026	0.4	0.1
	1604	1.5	0.5		1535	1.2	0.4
	2204	0.1	0.0		2125	0.0	0.0
8	0454	2.1	0.6	23	0432	2.2	0.7
Th	1127	0.4	0.1	F	1118	0.5	0.2
	1636	1.2	0.4		1601	1.1	0.3
	2228	0.1	0.0		2150	0.0	0.0
9	0533	2.2	0.7	24	0511	2.3	0.7
F	1230	0.5	0.2	Sa	1217	0.5	0.2
	1705	1.0	0.3		1636	0.9	0.3
	2250	0.1	0.0		2218	0.0	0.0
10	0619	2.2	0.7	25	0557	2.3	0.7
Sa	1335	0.6	0.2	Su	1327	0.5	0.2
	1733	0.8	0.2		1714	0.7	0.2
	2315	0.2	0.1		2249	0.1	0.0
11	0708	2.1	0.6	26	0647	2.3	0.7
Su	1508	0.6	0.2	M	1453	0.5	0.2
	1805	0.7	0.2		1807	0.6	0.2
	2341	0.3	0.1		2328	0.2	0.1
12	0803	2.0	0.6	27	0748	2.3	0.7
M				Tu	1624	0.4	0.1
					1945	0.5	0.2
13	0017	0.4	0.1	28	0022	0.3	0.1
Tu	0909	2.0	0.6	W	0857	2.2	0.7
	1817	0.5	0.2		1724	0.3	0.1
	2148	0.6	0.2		2205	0.6	0.2
14	0124	0.5	0.2	29	0146	0.5	0.2
W	1020	1.9	0.6	Th	1005	2.1	0.6
	1846	0.5	0.2		1803	0.2	0.1
	2347	0.7	0.2		2345	0.8	0.2
15	0314	0.6	0.2	30	0339	0.6	0.2
Th	1121	1.9	0.6	F	1109	2.0	0.6
	1911	0.4	0.1		1842	0.1	0.0
				31	0040	1.1	0.3
				Sa	0526	0.6	0.2
					1208	1.9	0.6
					1910	0.1	0.0

NOVEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0125	1.4	0.4	16	0124	1.4	0.4
Su	0648	0.6	0.2	M	0657	0.7	0.2
	1254	1.8	0.5		1228	1.4	0.4
	1937	0.0	0.0		1906	0.1	0.0
2	0207	1.7	0.5	17	0156	1.7	0.5
M	0757	0.5	0.2	Tu	0758	0.6	0.2
	1339	1.6	0.5		1310	1.3	0.4
	2000	0.0	0.0		1925	0.0	0.0
3	0243	1.9	0.6	18	0227	1.9	0.6
Tu	0859	0.4	0.1	W	0855	0.5	0.2
	1418	1.4	0.4		1349	1.1	0.3
	2026	0.0	0.0		1949	0.0	0.0
4	0322	2.1	0.6	19	0300	2.1	0.6
W	0956	0.4	0.1	Th	0949	0.4	0.1
	1457	1.2	0.4		1425	1.0	0.3
	2050	-0.1	0.0		2015	-0.1	0.0
5	0357	2.3	0.7	20	0338	2.3	0.7
Th	1050	0.4	0.1	F	1045	0.4	0.1
	1532	1.0	0.3		1506	0.8	0.2
	2112	0.0	0.0		2043	-0.1	0.0
6	0436	2.3	0.7	21	0417	2.5	0.8
F	1145	0.4	0.1	Sa	1137	0.3	0.1
	1604	0.8	0.2		1545	0.7	0.2
	2137	0.0	0.0		2116	-0.2	-0.1
7	0514	2.3	0.7	22	0459	2.5	0.8
Sa	1241	0.4	0.1	Su	1236	0.3	0.1
	1639	0.7	0.2		1630	0.6	0.2
	2202	0.0	0.0		2154	-0.1	0.0
8	0553	2.3	0.7	23	0546	2.5	0.8
Su	1343	0.5	0.2	M	1335	0.3	0.1
	1714	0.6	0.2		1723	0.5	0.2
	2231	0.1	0.0		2230	-0.1	0.0
9	0635	2.2	0.7	24	0634	2.4	0.7
M	1449	0.4	0.1	Tu	1437	0.2	0.1
	1801	0.5	0.2		1835	0.5	0.2
	2301	0.2	0.1		2319	0.1	0.0
10	0724	2.1	0.6	25	0727	2.3	0.7
Tu	1609	0.4	0.1	W	1533	0.2	0.1
	1918	0.5	0.2		2009	0.5	0.2
	2336	0.4	0.1				
11	0817	2.0	0.6	26	0018	0.3	0.1
W	1654	0.4	0.1	Th	0825	2.2	0.7
	2128	0.6	0.2		1622	0.1	0.0
					2200	0.7	0.2
12	0035	0.5	0.2	27	0144	0.5	0.2
Th	0910	1.9	0.6	F	0921	2.0	0.6
	1733	0.3	0.1		1705	0.1	0.0
	2318	0.7	0.2		2323	1.0	0.3
13	0211	0.6	0.2	28	0341	0.7	0.2
F	1008	1.8	0.5	Sa	1020	1.7	0.5
	1758	0.3	0.1		1739	0.0	0.0
14	0009	0.9	0.3	29	0025	1.3	0.4
Sa	0408	0.7	0.2	Su	0531	0.7	0.2
	1057	1.7	0.5		1112	1.5	0.5
	1821	0.2	0.1		1811	0.0	0.0
15	0048	1.2	0.4	30	0114	1.6	0.5
Su	0542	0.7	0.2	M	0706	0.7	0.2
	1146	1.6	0.5		1211	1.3	0.4
	1845	0.1	0.0		1843	-0.1	0.0

DECEMBER

Day	Time h m	Height ft	Height m	Day	Time h m	Height ft	Height m
1	0154	1.9	0.6	16	0127	1.8	0.5
Tu	0822	0.6	0.2	W	0813	0.6	0.2
	1301	1.1	0.3		1215	0.9	0.3
	1912	-0.1	0.0		1829	-0.1	0.0
2	0231	2.1	0.6	17	0206	2.1	0.6
W	0927	0.5	0.2	Th	0912	0.5	0.2
	1345	0.9	0.3		1306	0.7	0.2
	1939	-0.1	0.0		1905	-0.2	-0.1
3	0310	2.3	0.7	18	0244	2.3	0.7
Th	1023	0.4	0.1	F	1006	0.3	0.1
	1431	0.7	0.2		1402	0.6	0.2
	2006	-0.1	0.0		1940	-0.2	-0.1
4	0347	2.4	0.7	19	0323	2.5	0.8
F	1112	0.3	0.1	Sa	1053	0.2	0.1
	1507	0.6	0.2		1451	0.6	0.2
	2034	-0.1	0.0		2019	-0.3	-0.1
5	0421	2.4	0.7	20	0405	2.6	0.8
Sa	1157	0.3	0.1	Su	1141	0.2	0.1
	1548	0.6	0.2		1541	0.5	0.2
	2106	-0.1	0.0		2102	-0.3	-0.1
6	0456	2.4	0.7	21	0448	2.6	0.8
Su	1242	0.3	0.1	M	1226	0.1	0.0
	1627	0.5	0.2		1632	0.5	0.2
	2138	0.0	0.0		2147	-0.2	-0.1
7	0533	2.3	0.7	22	0533	2.6	0.8
M	1327	0.3	0.1	Tu	1309	0.1	0.0
	1712	0.5	0.2		1732	0.5	0.2
	2211	0.0	0.0		2235	-0.1	0.0
8	0610	2.2	0.7	23	0617	2.5	0.8
Tu	1407	0.3	0.1	W	1355	0.1	0.0
	1801	0.5	0.2		1842	0.6	0.2
	2245	0.1	0.0		2325	0.1	0.0
9	0647	2.1	0.6	24	0702	2.3	0.7
W	1449	0.3	0.1	Th	1437	0.0	0.0
	1905	0.5	0.2		1958	0.7	0.2
	2325	0.3	0.1				
10	0726	2.0	0.6	25	0028	0.3	0.1
Th	1527	0.3	0.1	F	0746	2.0	0.6
	2029	0.6	0.2		1518	0.0	0.0
					2127	0.9	0.3
11	0013	0.5	0.2	26	0149	0.6	0.2
F	0804	1.8	0.5	Sa	0832	1.7	0.5
	1603	0.2	0.1		1557	0.0	0.0
	2201	0.7	0.2		2247	1.2	0.4
12	0129	0.6	0.2	27	0339	0.8	0.2
Sa	0850	1.6	0.5	Su	0924	1.4	0.4
	1634	0.2	0.1		1636	-0.1	0.0
	2314	1.0	0.3		2356	1.5	0.5
13	0315	0.8	0.2	28	0551	0.8	0.2
Su	0934	1.5	0.5	M	1017	1.1	0.3
	1703	0.1	0.0		1712	-0.1	0.0
14	0006	1.2	0.4	29	0051	1.7	0.5
M	0515	0.8	0.2	Tu	0741	0.7	0.2
	1027	1.3	0.4		1122	0.8	0.2
	1731	0.1	0.0		1751	-0.1	0.0
15	0048	1.5	0.5	30	0137	2.0	0.6
Tu	0653	0.7	0.2	W	0900	0.5	0.2
	1122	1.1	0.3		1224	0.7	0.2
	1800	0.0	0.0		1827	-0.1	0.0
				31	0219	2.2	0.7
				Th	0953	0.4	0.1
					1330	0.6	0.2
					1905	-0.1	0.0

Time meridian 150° W. 0000 is midnight. 1200 is noon.
Heights are referred to mean lower low water which is the chart datum of soundings.

TABLE 2.—TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions for the reference stations in table 1. The following pages list the places called "subordinate stations" for which such predictions can be made and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference station which is listed in table 2 in bold face type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index at the end of this volume will assist in locating a particular station.

Caution.—The time and height differences listed in table 2 are average differences derived from comparisons of simultaneous tide observations at the subordinate location and its reference station. Because these figures are constant, they cannot provide for the daily variances of the actual tide. Therefore, it must be realized that although the application of the time and height differences will generally provide reasonably accurate approximations, they cannot result in as accurate predictions as those for the reference stations which are based upon much longer periods of analyses and which do provide for daily variances. In addition, at subordinate stations where the tide is chiefly diurnal, the tide correctors are intended primarily to be used to approximate the times and heights of the higher high and the lower low waters. When the lower high water and higher low water at the reference station are nearly the same height, great reliance should not be placed on the calculated corresponding tides at the subordinate station.

Time difference.—To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Differences, Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added, a minus (−) sign that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an a. m. tide it may be necessary to use the preceding day's p.m. tide at the reference station, or to obtain a p.m. tide it may be necessary to use the following day's a. m. tide. For example, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. For the second case, if a high water at a reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hours earlier, the high water at the subordinate station will occur at 2100 on July 16. The necessary allowance for change in date when the international data line is crossed is included in the time differences. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Summer or daylight saving time is not used in the tide tables.

Height differences.—The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicates that the difference should be added to the height at the reference station and a minus (−) sign that it should be subtracted. All height differences, ranges, and levels in table 2 are in feet but may be converted to meters by the use of table 7.

Ratio.—For some stations height differences would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given. Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown.

For some subordinate stations there is given in parentheses a ratio as well as a correction in feet. In those instances, each predicted high and low water at the reference station should first be multiplied by the ratio and then the correction in feet is to be added to or subtracted from each product as indicated.

As an example, at Treadwell Bay the values in the time and height difference columns in table 2 are given as +0 34, +0 46, and (*0.48 + 2.8) as referred to the reference station at Ketchikan, Alaska. If we assume that the tide predictions in column (1) below are those of Ketchikan on a particular day, application of the time and height corrections in columns (2) and (3) would result in the tide predictions for Treadwell Bay in column (4).

(1)		(2)	(3)	(4)		
Time h.m.	*Height ft*	*Time Corrections*	*Height Corrections*	*Time h.m.*	*Height*	
					ft	*meters*
0313	3.8	+0 46	X0.48 + 2.8	0359	4.6	1.4
0921	15.2	+0 34	X0.48 + 2.8	0955	10.1	3.1
1601	−0.4	+0 46	X0.48 + 2.8	1647	2.6	0.8
2230	14.1	+0 34	X0.48 + 2.8	2304	9.6	2.9

Range.—The *mean range* is the difference in height between mean high water and mean low water. The *spring range* is the average semidiurnal range occurring semimonthly as the result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. Where the tide is chiefly of the diurnal type the table gives the *diurnal range*, which is the difference in height between mean higher high water and mean lower low water.

Datum.—The datum of the predictions obtained through the height differences or ratios is also the datum of the largest scale chart for the locality. To obtain the depth at the time of high or low water, the predicted height should be added to the depth on the chart unless such height is negative (−), when it should be subtracted. To find the height at times between high and low water see table 3. On some charts the depths are given in meters and in such cases the heights of the tide can be reduced to meters by the use of table 7. Chart datums for the portion of the world covered by these tables are approximately as follows: *Mean lower low water* for the Pacific coast of the United States, Alaska and the Hawaiian Islands; *mean low water springs* for Central America and Mexico. For the rest of the area covered by these tables the datums generally used are approximately *mean low water springs, Indian spring low water*, or the *lowest possible low water*.

Mean Tide Level (Half-Tide Level).—The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart datum.

NOTE.—Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time High water	Time Low water	Height High water	Height Low water	Mean	Spring	
		° '	° '	h. m.	h. m.	ft	ft	ft	ft	ft
		S	W							
	ARGENTINA, Tierra del Fuego <1> Time meridian, 60°W			on CABO de HORNOS, p.4						
1	Bahia Buen Suceso	54 49	65 13	+0 55	+0 54	+0.9	+0.3	4.8	5.8	5.0
3	Bahia Aguirre	54 55	65 58	+0 28	+0 28	-0.9	-0.4	3.7	4.5	3.7
5	Bahia Ushuaia, Beagle Channel	54 49	68 13	+0 08	+0 02	-0.9	-0.6	3.9	4.4	3.6
	CHILE, Magellan Strait			on PUERTO MONTT, p.12						
7	Dungeness	52 24	68 26	-5 05	-5 05	*1.56	*0.94	23.8	29.8	16.8
9	Punta Catalina	52 32	68 46	-4 58	-4 58	*1.53	*1.04	22.8	28.5	16.8
11	Bahia Posesion	52 16	69 10	-4 31	-4 33	*1.83	*1.19	27.5	33.4	19.9
13	Banco Direccion	52 24	69 26	-4 21	-4 21	*1.90	*1.35	28.0	34.0	21.0
15	Bahia Santiago	52 31	69 52	-3 49	-3 45	-0.8	-1.6	14.0	17.8	10.6
17	Bahia Felipe	52 57	69 47	-3 48	-3 44	-2.9	-1.7	12.0	15.1	9.5
19	Segunda Angostura	52 45	70 18	-3 11	-3 03	+2.4	-0.4	16.0	20.3	12.8
				on PUNTA ARENAS, p.8						
21	Puerto Zenteno	52 47	70 46	-1 45	-1 45	+0.7	0.0	4.5	5.8	4.4
23	Bahia Gente Grande	53 03	70 16	-0 04	-0 22	+2.3	-0.2	6.3	7.4	5.0
25	PUNTA ARENAS	53 09	70 54	Daily predictions				3.8	4.9	4.0
27	Puerto del Hambre	53 38	70 55	+0 15	+0 10	0.0	0.0	3.6	4.7	3.9
29	Puerto San Antonio	53 54	70 54	+0 15	+0 15	+0.5	+0.5	3.8	5.0	4.5
31	Bahia Snug	53 51	71 25	+1 25	+1 25	+1.4	+0.9	4.3	5.6	5.2
33	Bahia Wood	53 49	71 38	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
35	Puerto Gallant	53 42	72 00	+1 20	+1 20	+1.4	+0.9	4.3	5.6	5.2
				on CABO de HORNOS, p.4						
37	Bahia Borja	53 32	72 30	-2 00	-2 00	-1.8	-2.1	4.5	5.0	2.4
39	Bahia Swallow	53 30	72 47	-1 55	-1 55	-1.8	-2.1	4.5	5.0	2.4
41	Caleta Playa Parda	53 19	73 01	-2 05	-2 05	-2.8	-2.1	3.5	4.0	1.9
43	Puerto Angosto	53 14	73 22	-2 30	-2 30	-2.7	-2.1	3.6	4.0	2.0
45	Caleta Sylvia	52 58	73 33	-2 11	-2 12	-2.4	-2.0	3.8	4.3	2.2
47	Puerto Tamar	52 56	73 46	-1 30	-1 30	-0.8	-0.7	4.1	4.6	3.7
49	Islote Pollo, Canal Smyth	52 23	73 41	-2 06	-2 06	-1.7	-0.9	3.4	4.3	3.1
51	Punta Ancud, Canal Smyth	52 43	73 49	-1 36	-1 36	-1.7	-0.9	3.4	4.1	3.1
53	Bahia Tuesday	52 51	74 27	-2 23	-2 24	-0.9	-0.7	4.0	4.5	3.6
55	Cabo Pilar	52 43	74 42	-2 34	-2 34	-2.7	-2.1	3.6	4.0	2.0
	CHILE, Coast									
57	Paso Goree, Bahia Nassau	55 19	67 14	+0 13	+0 13	+1.2	-0.6	6.0	6.7	4.7
59	Caleta Saint Martin, Isla Hermite	55 51	67 34	+0 08	-0 03	+0.6	+0.4	4.4	5.0	4.9
61	CABO de HORNOS	55 31	68 05	Daily predictions				4.2	4.8	4.4
63	Isla Diego Ramirez	56 28	68 43	+0 19	+0 19	-0.8	-1.1	4.5	5.0	3.4
65	Bahia India, Seno Ano Nuevo	55 30	69 06	+0 30	+0 30	+0.4	+0.1	4.5	5.0	4.6
67	Isla Noir	54 29	73 00	-0 53	-0 53	-2.0	-2.1	4.3	4.8	2.3
69	Islas Week	53 12	74 21	-1 17	-1 17	-2.0	-2.0	4.2	4.7	2.4
71	Evangelistas	52 24	75 06	-2 09	-2 09	-1.8	-1.5	3.9	4.4	2.7
73	Angostura Guia	50 45	74 24	-2 25	-2 25	- -	- -	- -	7.9	- -
75	Puerto Henry, Golfo Trinidad	50 00	75 20	-3 05	-3 05	-1.8	-2.1	4.5	5.0	2.4
77	Angostura Inglesa	48 59	74 24	-2 50	-2 50	-0.9	-2.0	5.3	6.0	2.9
79	Puerto Barbara, Canal Fallos	48 02	75 24	-2 48	-2 46	-0.9	-2.0	5.3	6.0	2.9
81	Puerto Barroso, Golfo de Penas	46 49	75 17	-3 50	-3 50	-0.9	-2.0	5.3	6.0	2.9
83	Puerto Slight, Golfo Tres Montes	46 49	75 33	-3 31	-3 31	*0.63	*0.57	2.8	3.8	2.7
85	Caleta Pascuas, Bahia San Andres	46 36	75 31	-2 15	-2 15	-2.0	-2.1	4.3	4.8	2.3
87	Puerto Refugio	45 52	74 47	-2 20	-2 20	-1.9	-2.0	4.3	4.9	2.4
89	Puerto Yates	45 26	74 26	-2 30	-2 30	+2.4	+0.3	6.3	8.0	5.7
91	Rada Vallenar	45 19	74 32	-2 50	-2 50	-1.1	-1.7	4.8	6.0	3.0
93	Puerto Italiano, Canal Darwin	45 22	74 08	-2 50	-2 50	-0.9	-1.7	5.0	6.2	3.1
95	Puerto Lagunas	45 17	73 46	-2 00	-2 00	-0.2	-1.6	5.6	7.1	3.5
97	Puerto Americano	45 03	73 45	-1 45	-1 45	-0.7	-1.7	5.2	6.5	3.2
99	Isla Guamblin	44 49	75 02	-3 45	-3 45	+0.5	-1.7	6.4	7.7	3.8
101	Isla Guafo	43 37	74 36	-4 00	-4 00	+0.2	-1.5	5.9	7.5	3.8
	Golfo de Corcovado									
103	Puerto Low	43 49	74 01	-2 55	-2 55	+0.6	-1.6	6.4	7.9	3.9
105	Puerto Melinka	43 54	73 45	-3 20	-3 20	+0.9	-1.6	6.7	8.2	4.0
107	Bahia Tictoc	43 37	72 56	-3 00	-3 00	+1.9	-0.9	7.0	8.6	4.9
109	Puerto San Pedro	43 20	73 42	-2 20	-2 20	+1.7	-1.3	7.2	8.8	4.6
				on PUERTO MONTT, p.12						
111	Puerto Quellon	43 07	73 38	+0 15	+0 15	-4.0	-3.3	12.5	15.7	8.2
113	Puerto Queilen	42 54	73 29	+0 30	+0 30	-3.7	-3.5	13.0	16.4	8.2
115	Castro	42 29	73 46	-0 05	-0 05	-1.9	-3.3	14.6	18.4	9.2
	Golfo de Ancud									
117	Puerto Quemchi	42 09	73 29	+0 15	+0 15	+1.1	-1.5	15.8	19.7	11.6
119	Bahia Linao	41 56	73 33	+0 20	+0 20	-3.4	-3.2	13.0	16.9	8.5
121	Paso Lagartija	41 50	73 19	+0 20	+0 20	-3.9	-3.2	12.5	16.5	9.2

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° '	° '	h. m.	h. m.	ft	ft	ft	ft	ft
		S	W	on PUERTO MONTT, p.12						
	CHILE, Coast Time meridian, 60°W									
	Golfo de Ancud									
123	Paso Tautil..........................	41 44	73 04	+0 05	+0 05	-0.8	-0.6	13.0	17.7	11.1
125	PUERTO MONTT, Seno Reloncavi............	41 29	72 58	Daily predictions				13.2	18.0	11.8
127	Roca Remolinos, Canal Chacao............	41 48	73 32	+0 25	+0 25	-3.9	-3.2	12.5	16.9	8.3
				on VALPARAISO, p.16						
129	Ancud..................................	41 52	73 50	+2 00	+1 59	+1.4	-0.2	4.6	6.0	3.6
131	Carelmapu, Canal Chacao................	41 45	73 42	+3 12	+3 10	*1.93	*1.20	6.9	8.8	5.3
133	Maullin, Rio Maullin...................	41 37	73 36	+3 15	+3 15	+2.5	-0.6	6.1	7.9	3.9
135	Corral, Bahia Corral...................	39 52	73 26	+0 56	+0 55	+1.4	+1.2	3.2	4.0	4.3
137	Valdivia, Rio Valdivia.................	39 49	73 15	+1 55	+1 55	-1.0	-1.0	3.0	3.9	2.0
139	Queule.................................	39 23	73 14	+0 45	+0 45	-0.2	-1.0	3.8	4.9	2.4
141	Rio Imperial entrance..................	38 48	73 23	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
143	Caleta La Hacienda, Isla Mocha.........	38 20	73 56	+0 25	+0 25	+0.1	-0.9	4.0	5.2	2.6
145	Puerto Lebu............................	37 37	73 41	+0 40	+0 40	+0.1	-0.7	3.8	4.9	2.7
147	Puerto Yana............................	37 22	73 40	+0 35	+0 35	-0.2	-1.0	3.8	4.9	2.4
149	Isla Santa Maria.......................	36 59	73 32	+0 30	+0 30	+1.0	-0.8	4.8	6.2	3.1
151	Bahia Lota, Bahia Arauco...............	37 06	73 10	+0 20	+0 20	-0.2	-1.0	3.8	4.9	2.4
153	Talcahuano, Bahia Concepcion...........	36 42	73 06	+0 24	+0 23	+0.1	-0.1	3.2	4.3	3.0
155	Bahia Coliumo..........................	36 32	72 58	+0 30	+0 30	-0.2	-1.0	3.8	4.9	2.4
157	Buchupureo.............................	36 04	72 47	+0 30	+0 30	*0.42	*0.13	1.7	2.1	1.0
159	Curanipe...............................	35 49	72 36	+0 50	+0 50	-1.0	-1.0	3.0	3.9	2.0
161	Constitucion, Rio Maule entrance........	35 19	72 24	+0 25	+0 25	-0.2	-1.0	3.8	4.9	2.4
163	Llico..................................	34 45	72 07	+0 15	+0 15	-0.2	-1.0	3.8	4.9	2.4
165	Rada Pichilemu.........................	34 23	71 59	+0 10	+0 10	-0.1	-1.0	3.9	5.0	2.4
167	Rada Topocalma.........................	34 07	72 00	+0 05	+0 05	+0.4	-0.4	3.8	4.9	3.0
169	San Antonio............................	33 35	71 38	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
171	Algarrobo..............................	33 21	71 41	0 00	0 00	0.0	0.0	3.0	3.9	3.0
173	Rada Quintay...........................	33 11	71 42	-0 05	-0 05	-0.1	-1.0	3.9	5.0	2.4
175	VALPARAISO.............................	33 02	71 38	Daily predictions				3.0	3.9	3.0
177	Quintero...............................	32 46	71 32	-0 05	-0 05	+1.5	+0.7	3.8	4.9	4.1
179	Zapallar...............................	32 32	71 29	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
181	Papudo.................................	32 30	71 28	-0 25	-0 25	-0.2	-1.0	3.8	4.9	2.4
183	Pichidangui............................	32 09	71 33	-0 30	-0 30	-0.2	-1.0	3.8	4.9	2.4
185	Los Vilos..............................	31 54	71 32	-0 20	-0 20	+1.0	+0.4	3.6	4.6	3.7
187	Caleta Oscuro..........................	31 25	71 37	-0 25	-0 25	-0.3	-0.9	3.6	4.6	2.4
189	Bahia Tongoy...........................	30 15	71 31	-0 40	-0 40	-0.2	-1.0	3.8	4.9	2.4
191	Coquimbo...............................	29 56	71 20	-0 21	-0 23	-0.2	-0.1	2.9	3.8	2.9
193	Caleta Totoralillo.....................	29 29	71 20	-0 50	-0 50	-0.2	-1.0	3.8	4.9	2.4
				on ANTOFAGASTA, p.20						
195	Huasco.................................	28 28	71 14	+0 19	+0 18	-0.3	-0.4	2.7	3.5	2.3
197	Carrizal Bajo..........................	28 04	71 11	0 00	-0 01	*0.77	*0.54	2.3	2.9	1.9
199	Caleta Barranquillas...................	27 31	70 56	0 00	0 00	*0.90	*0.92	2.3	2.9	2.4
201	Caldera................................	27 04	70 50	+0 17	+0 16	+0.5	+0.3	2.8	3.6	3.0
203	Puerto Flamenco........................	26 34	70 44	+0 10	+0 09	+0.1	0.0	2.7	3.5	2.7
205	Chanaral de las Animas.................	26 21	70 38	+0 22	+0 23	+0.1	+0.1	2.6	3.4	2.7
207	Taltal.................................	25 25	70 29	+0 15	+0 15	0.0	0.0	2.6	3.4	2.6
209	Paposo.................................	25 02	70 28	+0 15	+0 15	0.0	0.0	2.6	3.4	2.6
211	Blanco Encalada........................	24 22	70 32	+0 10	+0 10	+0.1	0.0	2.7	3.5	2.7
213	ANTOFAGASTA............................	23 39	70 25	Daily predictions				2.6	3.4	2.6
215	Mejillones del Sur.....................	23 06	70 28	0 00	0 00	+0.3	-0.7	3.6	4.7	2.4
217	Cobija.................................	22 34	70 18	-0 05	-0 05	-0.4	-0.[illegible]	3.0	3.9	2.0
219	Tocopilla..............................	22 06	70 14	-0 05	-0 05	+0.1	-0.3	3.0	3.9	2.5
221	Caleta Lobos...........................	21 05	70 11	-0 25	-0 25	+0.4	+0.1	2.9	3.8	2.9
223	Iquique................................	20 12	70 10	-0 22	-0 15	+0.3	+0.5	2.4	3.1	3.0
225	Caleta Junin...........................	19 40	70 12	-0 31	-0 13	-0.3	-0.1	2.4	3.1	2.4
227	Pisagua................................	19 35	70 14	-0 20	-0 20	+0.7	+0.3	3.0	3.9	3.1
229	Arica..................................	18 28	70 20	-0 18	-0 19	*0.97	*1.08	2.4	3.1	2.6
	PERU Time meridian, 75°W			on MATARANI, p.24						
231	Ilo....................................	17 38	71 21	+0 02	-0 02	+0.2	0.0	2.3	2.9	1.5
233	MATARANI...............................	17 00	72 07	Daily predictions				2.1	2.7	1.4
235	Puerto San Juan........................	15 21	75 09	-0 34	-0 37	-0.3	0.0	1.8	2.4	1.2
				on CALLAO, p.28						
237	Pisco..................................	13 43	76 14	+0 36	+0 29	-0.4	-0.5	1.9	2.5	1.3
239	CALLAO.................................	12 03	77 09	Daily predictions				1.8	2.4	1.7
241	Huacho.................................	11 07	77 37	-0 24	-0 31	-0.3	-0.5	2.0	2.6	1.3
243	Bahia Huarmey..........................	10 06	78 10	-0 46	-0 55	0.0	-0.4	2.2	2.9	1.5
245	Chimbote...............................	9 05	78 38	-0 58	-1 05	+0.7	+0.2	2.3	3.1	2.2
247	Puerto Chicama.........................	7 42	79 27	-1 21	-1 33	+0.5	-0.4	2.7	3.5	1.7
249	Punta Eten.............................	6 57	79 52	-1 29	-1 41	+0.8	-0.4	3.0	3.9	1.9

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° ′	° ′	h. m.	h. m.	ft	ft	ft	ft	ft
		S	W	on TALARA, p.32						
	PERU Time meridian, 75°W									
251	Bayovar	5 50	81 03	+0 21	+0 17	-0.6	-0.1	3.5	4.5	2.2
253	Paita	5 05	81 07	+0 12	+0 08	-0.3	-0.1	3.8	4.9	2.4
255	TALARA	4 35	81 17	Daily predictions				4.0	5.2	2.6
257	Caleta Lobitos	4 27	81 17	+0 02	-0 02	+0.1	0.0	4.1	5.3	2.6
259	Zorritos	3 40	80 40	+0 35	+0 51	+0.8	+0.1	4.7	6.0	3.0
	ECUADOR									
261	Puerto Bolivar	3 16	80 01	+0 57	+0 37	*1.80	*1.67	7.3	9.4	4.7
263	Puna	2 44	79 55	+1 33	+1 43	*2.37	*2.33	9.5	12.3	6.2
				on GUAYAQUIL, p.36						
265	GUAYAQUIL	2 12	79 52	Daily predictions				10.8	12.1	6.0
				on TALARA, p.32						
267	La Libertad, Bahia de Santa Elena	2 13	80 55	-0 04	-0 06	+1.6	+0.2	5.4	7.0	3.5
269	Puerto de Cayo	1 21	80 45	-0 15	-0 15	+2.3	+0.3	6.0	7.7	3.9
271	Bahia Manta	0 57	80 44	-0 20	-0 17	+2.5	+0.2	6.3	8.0	4.0
				on BUENAVENTURA, p.40						
273	Rio Chone	0 35	80 26	-0 07	+0 17	*0.66	*0.69	6.8	8.6	4.3
275	Cabo Pasado	0 21	80 31	-0 11	+0 10	*0.63	*0.62	6.6	8.2	4.1
		N	W							
277	Rio Santiago	1 13	79 07	-0 08	+0 16	*0.77	*0.77	8.0	10.0	5.0
279	San Lorenzo	1 15	78 50	+0 02	+0 15	*0.85	*0.77	8.9	11.0	5.5
				on SALINA CRUZ, p.56						
	Galapagos Islands	S	W							
281	Isla San Cristobal	0 54	89 37	+1 12	+1 14	+0.9	-0.3	4.8	6.1	3.1
283	Isla Santa Maria	1 14	90 27	+1 10	+1 07	0.0	-0.4	4.0	5.0	2.5
285	Bahia Isabela, Isla Isabela	0 36	91 05	+1 06	+1 08	-0.2	-0.4	3.8	4.8	2.4
287	Caleta Tagus, Isla Isabela	0 15	91 22	+1 01	+1 02	+0.1	-0.4	4.1	5.2	2.5
289	Bahia de Perry, Isla Isabela	0 34	90 58	+1 06	+0 58	+0.7	-0.3	4.6	5.8	2.9
291	Caleta Aeolian, Isla Baltra	0 26	90 17	+1 10	+1 14	+1.0	-0.3	4.9	6.2	3.0
		N	W							
293	Bahia de Darwin, Isla Genovesa	0 19	89 57	+1 05	+1 09	+1.2	-0.3	5.1	6.4	3.1
				on BUENAVENTURA, p.40						
	COLOMBIA <2>									
295	Tumaco	1 50	78 44	-0 19	-0 04	*0.79	*0.79	8.2	10.2	5.1
297	BUENAVENTURA	3 54	77 05	Daily predictions				10.4	12.9	6.5
299	Los Negritos	3 54	77 24	-0 10	-0 01	-0.4	0.0	10.0	12.5	6.3
301	Rio San Juan	4 17	77 30	-0 09	0 00	-0.4	0.0	10.0	12.5	6.3
303	Bahia Cuevita	5 28	77 31	-0 09	0 00	-0.3	+0.1	10.0	12.8	6.4
305	Ensenada Utria	6 00	77 21	-0 10	-0 01	-0.3	+0.1	10.0	12.8	6.4
307	Bahia Solano	6 14	77 24	-0 28	-0 09	*0.78	*0.78	8.3	10.3	5.1
309	Bahia Cupica	6 41	77 30	-0 19	-0 10	-0.1	+0.2	10.1	13.0	6.5
311	Bahia Octavia	6 52	77 40	-0 23	-0 09	-0.1	+0.2	10.1	13.0	6.5
				on BALBOA, p.44						
	PANAMA <2>									
313	Bahia Pina	7 34	78 11	0 00	-0 11	-2.4	-0.3	10.5	13.7	6.8
315	Punta Garachine	8 05	78 25	0 00	-0 08	-2.0	-0.3	10.9	14.2	7.0
317	Isla del Rey	8 18	78 54	-0 03	-0 04	-2.2	-0.3	10.7	13.9	6.9
319	Rio Chepo	8 59	79 07	-0 01	-0 02	-0.1	0.0	12.5	16.2	8.1
321	BALBOA	8 57	79 34	Daily predictions				12.6	16.4	8.2
323	Naos Island	8 55	79 32	+0 01	0 00	-0.5	-0.3	12.4	15.6	7.8
325	Taboga	8 48	79 33	-0 05	-0 06	-0.1	0.0	12.5	16.2	8.1
327	Bahia de Chame	8 41	79 45	-0 02	-0 03	-0.1	0.0	12.5	16.2	8.1
329	Punta Mala	7 28	80 00	+0 03	-0 12	*0.64	*0.63	8.1	10.5	5.2
331	Isla Cebaco	7 31	81 13	-0 06	-0 05	*0.65	*0.63	8.3	10.8	5.3
333	Bahia Honda	7 46	81 31	-0 04	-0 03	*0.65	*0.63	8.3	10.8	5.3
335	Isla Parida	8 08	82 19	0 00	-0 09	*0.63	*0.47	8.2	10.0	5.0
				on PUNTARENAS, p.48						
337	Puerto Armuelles	8 16	82 52	+0 55	+0 59	+0.3	+0.2	7.6	9.6	4.8
	COASTA RICA <2> Time meridian, 90°W									
339	Golfito, Golfo Dulce	8 39	83 11	-0 13	+0 02	+1.3	+1.1	7.7	9.5	5.8
341	Bahia Uvita	9 09	83 45	-0 25	-0 20	0.0	0.0	7.5	9.2	4.5
343	Quepos	9 24	84 10	-0 13	-0 04	-0.7	0.0	6.8	8.4	4.2
345	Puerto Herradura	9 39	84 40	-0 06	-0 01	0.0	0.0	7.5	9.2	4.5
347	PUNTARENAS	9 58	84 50	Daily predictions				7.5	9.2	4.6
349	Bahia de Culebra	10 38	85 40	-0 02	-0 02	0.0	0.0	7.5	9.0	4.5
351	Golfo Elena	10 56	85 49	-0 02	-0 02	-0.1	-0.1	7.5	8.8	4.4
353	Cocos Island	5 33	86 59	-0 25	-0 25	-0.5	0.0	7.0	8.5	4.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Spring	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	NICARAGUA <2> Time meridian, 90°W			on PUNTARENAS, p.48						
355	Puerto Somoza	12 12	86 46	+0 11	+0 22	-1.7	-0.1	5.9	7.3	3.6
				on LA UNION, p.52						
357	San Juan del Sur	11 15	85 53	-0 27	-0 05	*0.77	*0.77	6.2	7.6	3.8
359	Corinto (Isla Cardon)	12 29	87 10	-0 18	0 00	-2.1	-0.1	6.1	7.5	3.8
	HONDURAS <2>									
361	Amapala	13 18	87 39	-0 07	-0 06	-0.1	0.0	8.0	9.8	4.9
	EL SALVADOR									
363	LA UNION (Cutuco)	13 20	87 49	Daily predictions				8.1	10.0	5.0
365	La Libertad	13 29	89 19	-0 26	0 00	*0.67	*0.67	5.4	6.7	3.3
367	Acajutla	13 35	89 51	-0 25	-0 03	*0.64	*0.64	5.2	6.4	3.2
	GUATEMALA <2>									
369	Puerto de San Jose	13 55	90 50	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
371	Champerico	14 18	91 56	-0 27	-0 03	*0.61	*0.61	5.0	6.1	3.0
	MEXICO <2>			on SALINA CRUZ, p.56				Mean	Diurnal	
373	Puerto Angel	15 39	96 30	-0 04	-0 04	-0.7	0.0	2.9	3.4	1.6
375	SALINA CRUZ	16 10	95 12	Daily predictions				3.6	4.1	1.9
377	Acapulco	16 50	99 55	-0 25	-0 24	-1.9	+0.1	1.6	2.1	1.0
				on SAN DIEGO, p.64						
379	Manzanillo	19 03	104 20	+0 37	+0 45	-2.9	-0.5	1.7	2.3	1.3
381	Puerto Vallarta	20 37	105 15	+0 22	+0 31	*0.62	*0.56	2.6	3.5	1.8
	Time meridian, 105°W									
383	Isla Socorro	18 44	111 01	-0 38	-0 29	-1.9	-0.5	2.7	3.5	1.8
385	Mazatlan	23 12	106 25	-0 38	-0 29	*0.70	*0.56	3.0	3.8	2.0
	Gulf of California									
387	Topolobampo	25 36	109 03	+0 49	+0 57	*0.68	*0.78	2.7	3.7	2.0
389	Puerto Penasco	31 18	113 33	+4 59	+5 08	*2.58	*1.33	11.7	14.1	7.0
				on GUAYMAS, p.60						
391	GUAYMAS †	27 56	110 54	Daily predictions				- -	2.6	1.3
393	Tepoca Bay	30 16	112 52	- - -	- - -	- -	- -	- -	13.0	6.5
395	Colorado River entrance <3>	31 46	114 44	- - -	- - -	- -	- -	- -	23.0	- -
397	La Paz †	24 10	110 21	+0 56	-0 47	+0.8	0.0	- -	3.4	1.7
	Baja California			on SAN DIEGO, p.64						
399	San Carlos	24 47	112 07	-0 09	0 00	0.0	-0.2	4.3	5.6	2.9
	Time meridian, 120°W									
401	Isla Guadalupe	28 53	116 18	-0 30	-0 21	*0.78	*0.78	3.2	4.6	2.3
403	Ensenada, Todos Santos Bay	31 51	116 38	-0 19	-0 11	*0.92	*0.89	3.8	5.3	2.7
	CALIFORNIA									
405	Point Loma	32 40	117 14	-0 09	-0 02	*0.92	*0.92	3.7	5.3	2.8
407	San Diego, Quarantine Station	32 42	117 14	-0 04	+0 02	*0.96	*0.96	3.9	5.6	2.9
409	SAN DIEGO (Broadway)	32 43	117 10	Daily predictions				4.0	5.7	3.0
411	National City, San Diego Bay	32 40	117 07	+0 04	+0 10	+0.2	0.0	4.3	5.9	3.0
413	Quivira Basin, Mission Bay	32 46	117 14	+0 05	+0 04	*0.95	*0.95	3.8	5.4	2.8
415	Crown Point, Mission Bay	32 47	117 14	-0 03	+0 16	*0.96	*0.96	3.9	5.5	2.8
417	La Jolla (Scripps Institution Wharf)	32 52	117 16	-0 01	-0 05	*0.93	*0.93	3.7	5.4	2.8
419	San Clemente	33 25	117 37	-0 15	-0 11	*0.92	*0.92	3.7	5.3	2.7
	San Pedro Channel			on LOS ANGELES, p.68						
421	Newport Bay Entrance, Corona del Mar	33 36	117 53	-0 02	-0 01	*0.97	*0.97	3.7	5.4	2.8
423	Balboa Pier, Newport Beach	33 36	117 54	-0 09	0 00	*0.96	*0.96	3.6	5.3	2.7
425	Santa Ana River entrance (inside)	33 38	117 57	+0 23	+1 47	*0.54	*0.20	2.4	3.3	1.4
427	Los Patos (highway bridge)	33 43	118 03	+1 00	+1 12	*0.83	*0.60	3.4	4.7	2.3
429	Long Beach, Outer Harbor, Pier A	33 46	118 12	+0 03	+0 08	*0.96	*0.96	3.7	5.3	2.7
431	Long Beach, Middle Harbor	33 45	118 14	-0 01	0 00	*1.01	*1.01	3.9	5.6	2.9
433	Long Beach, Inner Harbor	33 46	118 13	+0 04	+0 05	*0.96	*0.96	3.7	5.3	2.7
435	Cabrillo Beach	33 42	118 16	+0 01	+0 01	*1.00	*1.00	3.8	5.5	2.8
437	LOS ANGELES (Outer Harbor)	33 43	118 16	Daily predictions				3.8	5.5	2.9

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	CALIFORNIA San Pedro Channel Time meridian, 120°W			on LOS ANGELES, p.68						
439	Los Angeles Harbor, Mormon Island........	33 45	118 16	+0 04	+0 02	-0.1	0.0	3.8	5.4	2.8
441	El Segundo, Santa Monica Bay............	33 55	118 26	+0 13	+0 13	*0.96	*0.96	3.7	5.3	2.7
443	Santa Monica, Municipal Pier............	34 00	118 30	+0 03	+0 06	-0.1	0.0	3.7	5.4	2.8
	Santa Barbara Channel									
445	Mugu Lagoon (ocean pier)................	34 06	119 06	+0 03	+0 11	*0.96	*0.96	3.7	5.3	2.7
447	Port Hueneme............................	34 09	119 12	+0 10	+0 13	-0.1	0.0	3.7	5.4	2.8
449	Ventura.................................	34 16	119 17	+0 09	+0 16	-0.1	0.0	3.7	5.4	2.8
451	Rincon Island, Mussel Shoals............	34 21	119 27	+0 21	+0 22	*0.99	*1.04	3.7	5.5	2.8
453	Santa Barbara...........................	34 25	119 41	+0 26	+0 26	*0.97	*0.97	3.6	5.4	2.8
455	Gaviota.................................	34 28	120 13	+0 39	+0 37	*0.96	*0.96	3.6	5.3	2.8
	Santa Barbara Islands									
457	Wilson Cove, San Clemente Island........	33 00	118 33	-0 03	-0 03	*0.94	*0.94	3.6	5.2	2.7
459	Catalina Harbor, Santa Catalina Island..	33 26	118 30	+0 11	+0 17	*0.94	*0.94	3.6	5.2	2.7
461	Avalon, Santa Catalina Island...........	33 21	118 19	+0 06	+0 09	*0.96	*0.96	3.7	5.3	2.7
463	Santa Barbara Island....................	33 29	119 02	-0 02	+0 04	*0.92	*0.92	3.5	5.1	2.6
465	San Nicolas Island......................	33 16	119 30	+0 10	+0 21	*0.88	*0.88	3.3	4.9	2.5
467	Prisoners Harbor, Santa Cruz Island.....	34 01	119 41	+0 25	+0 26	*0.90	*0.90	3.4	5.0	2.6
469	Bechers Bay, Santa Rosa Island..........	34 00	120 03	+0 37	+0 35	*0.96	*0.96	3.6	5.3	2.8
471	Cuyler Harbor, San Miguel Island........	34 03	120 21	+0 33	+0 34	*0.94	*0.94	3.5	5.2	2.7
	Outer Coast									
473	Point Arguello..........................	34 35	120 39	+0 45	+0 43	*0.94	*0.94	3.5	5.2	2.7
475	Port San Luis Wharf.....................	35 10	120 45	+0 48	+0 51	*0.98	*0.98	3.6	5.4	2.9
477	Morro Beach, Estero Bay.................	35 24	120 52	+0 56	+0 56	*0.94	*0.94	3.5	5.2	2.8
479	San Simeon..............................	35 38	121 11	+0 56	+0 58	*0.97	*0.97	3.6	5.3	2.8
481	Carmel Cove, Carmel Bay.................	36 31	121 56	+1 12	+1 13	*0.96	*0.96	3.5	5.2	2.8
				on SAN FRANCISCO, p.72						
483	Monterey, Monterey Bay..................	36 36	121 53	-1 08	-0 47	-0.5	0.0	3.6	5.4	2.9
484	General Fish Company Pier...............	36 48	121 47	-1 08	-0 46	-0.6	-0.1	3.6	5.3	2.8
485	Moss Landing, Ocean Pier................	36 48	121 47	-1 10	-0 48	-0.7	-0.1	3.5	5.2	2.8
487	Elkhorn Yacht Club......................	36 49	121 47	-1 09	-0 45	-0.6	-0.1	3.5	5.3	2.8
489	Elkhorn Slough, Highway 1 Bridge........	36 49	121 47	-1 06	-0 49	-0.7	-0.1	3.5	5.2	2.8
491	Pacific Mariculture Dock................	36 49	121 46	-0 54	-0 40	-0.5	0.0	3.6	5.4	2.9
493	Elkhorn, Elkhorn Slough.................	36 49	121 45	-0 48	-0 42	-0.6	0.0	3.5	5.3	2.8
495	Kirby Park, Elkhorn Slough..............	36 50	121 45	-0 43	-0 39	-0.4	-0.1	3.7	5.5	2.9
497	Elkhorn Slough railroad bridge..........	36 51	121 45	-0 36	-0 39	-0.4	-0.1	3.7	5.5	2.9
499	Santa Cruz, Monterey Bay................	36 58	122 01	-1 15	-0 58	-0.6	0.0	3.5	5.3	2.8
501	Ano Nuevo Island........................	37 06	122 20	-1 24	-1 04	-0.7	-0.1	3.5	5.2	2.7
503	Princeton, Halfmoon Bay.................	37 30	122 29	-1 06	-0 50	-0.3	0.0	3.8	5.5	3.0
505	Southeast Farallon Island...............	37 42	123 00	-0 39	-0 19	-0.3	0.0	3.8	5.6	3.0
507	San Francisco Bar.......................	37 46	122 38	-0 35	-0 31	-0.2	0.0	3.9	5.6	3.0
509	Ocean Beach, outer coast................	37 46	122 31	-0 49	-0 35	+0.1	0.0	4.2	6.0	3.2
	San Francisco Bay									
511	Point Bonita, Bonita Cove...............	37 49	122 32	-0 17	-0 10	+0.3	0.0	4.3	6.0	3.3
513	SAN FRANCISCO (Golden Gate).............	37 48	122 28	Daily predictions				4.1	5.8	3.2
515	Alcatraz Island.........................	37 50	122 25	+0 14	+0 18	0.0	0.0	4.1	5.8	3.1
517	San Francisco, North Point, Pier 41.....	37 49	122 25	+0 13	+0 11	+0.2	0.0	4.3	6.1	3.3
519	Rincon Point, Pier 22 1/2...............	37 47	122 23	+0 23	+0 25	+0.4	0.0	4.6	6.3	3.4
521	Yerba Buena Island......................	37 49	122 22	+0 32	+0 40	+0.3	0.0	4.4	6.1	3.3
523	Oakland, Matson Wharf...................	37 49	122 20	+0 28	+0 36	+0.3	0.0	4.4	6.2	3.3
525	Oakland Pier............................	37 48	122 20	+0 33	+0 48	+0.2	0.0	4.3	6.0	3.2
527	Oakland Inner Harbor....................	37 48	122 17	+0 37	+0 41	+0.5	0.0	4.7	6.4	3.4
529	Alameda.................................	37 46	122 18	+0 32	+0 41	+0.6	0.0	4.8	6.5	3.5
531	Oakland Harbor, Grove Street............	37 48	122 17	+0 33	+0 42	+0.4	0.0	4.5	6.2	3.3
533	Oakland Harbor, Park Street Bridge......	37 46	122 14	+0 38	+0 44	+0.6	0.0	4.7	6.4	3.4
535	Bay Farm Island, San Leandro Bay........	37 45	122 14	+0 49	+0 59	+0.8	0.0	4.9	6.6	3.6
537	Oakland Airport.........................	37 44	122 12	+0 47	+0 52	+0.8	0.0	4.9	6.6	3.6
539	Potrero Point...........................	37 46	122 23	+0 33	+0 46	+0.5	0.0	4.6	6.3	3.4
541	Hunters Point...........................	37 44	122 21	+0 25	+0 39	+0.9	0.0	5.0	6.7	3.6
543	San Leandro Channel.....................	37 42	122 12	+1 01	+1 29	+1.4	0.0	5.5	7.2	3.8
545	Roberts Landing, 1.3 miles west of......	37 40	122 12	+0 52	+1 28	+1.4	+0.1	5.4	7.2	3.9
547	South San Francisco.....................	37 40	122 23	+0 38	+0 56	+1.2	0.0	5.3	7.0	3.8
549	Oyster Point Marina.....................	37 40	122 23	+0 48	+1 07	+1.1	0.0	5.2	6.9	3.7
551	Point San Bruno.........................	37 39	122 23	+0 38	+1 10	+1.1	+0.1	5.1	6.9	3.7
553	Seaplane Harbor.........................	37 38	122 23	+0 42	+1 03	+1.4	0.0	5.4	7.2	3.9
555	Coyote Point Marina.....................	37 36	122 19	+0 42	+1 08	+1.5	0.0	5.6	7.4	3.9
557	San Mateo Bridge (west end).............	37 35	122 15	+0 52	+1 20	+1.8	+0.1	5.8	7.6	4.1
559	San Mateo Bridge (east end).............	37 36	122 11	+0 48	+1 19	+1.8	0.0	5.9	7.7	4.1
561	Alameda Creek...........................	37 36	122 09	+1 03	+2 31	+0.3	-0.8	5.2	6.1	2.9
563	Coyote Hills Slough entrance............	37 34	122 08	+1 02	+2 28	+0.9	-0.6	5.6	6.7	3.3
565	Bay Slough, west end....................	37 33	122 15	+0 48	+1 28	+1.8	0.0	5.9	7.7	4.1

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	San Francisco Bay-Continued Time meridian, 120°W			on SAN FRANCISCO, p.72						
567	Bay Slough, east end	37 33	122 13	+0 49	+1 52	+1.4	-0.3	5.8	7.3	3.8
569	Redwood Creek Marker #8	37 32	122 12	+0 53	+1 28	+2.1	+0.1	6.2	8.0	4.3
571	Redwood Creek entrance (inside)	37 31	122 12	+1 06	+1 38	+2.1	+0.1	6.1	7.9	4.2
573	South Bay Wreck	37 33	122 10	+1 02	+1 37	+2.2	+0.1	6.2	8.0	4.3
575	Corkscrew Slough	37 30	122 13	+1 03	+1 42	+2.2	+0.1	6.2	8.0	4.3
577	Redwood City, Wharf 5	37 30	122 13	+0 58	+1 32	+2.2	+0.1	6.2	8.0	4.3
579	West Point Slough	37 30	122 12	+1 03	+1 36	+2.2	+0.1	6.2	8.0	4.3
581	Smith Slough	37 30	122 14	+1 15	+1 58	+2.1	0.0	6.2	7.9	4.2
583	Newark Slough	37 31	122 05	+1 11	+1 58	+2.6	+0.1	6.6	8.4	4.2
585	Dumbarton Highway Bridge	37 30	122 07	+1 00	+1 38	+2.6	+0.1	6.6	8.4	4.5
587	Ravenswood Slough <17>	37 30	122 10	+1 05	- - -	- -	- -	- -	- -	- -
589	Granite Rock	37 30	122 13	+1 03	+1 38	+2.2	+0.1	6.2	8.0	4.3
591	Palo Alto Marker #8 <18>	37 28	122 06	+1 07	- - -	- -	- -	- -	- -	- -
593	Palo Alto Yacht Harbor	37 27	122 06	+1 09	+2 09	+2.5	0.0	6.6	8.3	4.4
595	Mowry Slough	37 30	122 02	+1 12	+2 07	+2.6	0.0	6.7	8.4	4.4
597	Calaveras Point, west of	37 28	122 04	+1 05	+1 49	+2.8	+0.1	6.8	8.5	4.6
599	Mud Slough railroad bridge <18>	37 28	121 59	+1 19	+2 59	+1.7	-0.6	6.4	7.5	3.7
601	Guadalupe Slough	37 27	122 02	+1 14	+2 15	+2.7	0.0	6.8	8.5	4.5
603	Upper Guadalupe Slough	37 26	122 00	+1 23	+2 21	+3.4	+0.2	7.3	9.2	5.0
605	Coyote Creek, Alviso Slough	37 28	122 01	+1 13	+2 08	+3.1	+0.2	7.0	8.9	4.8
607	Gold Street Bridge, Alviso Slough	37 25	121 58	+1 15	+2 34	+3.4	+0.1	7.4	9.2	4.9
609	Coyote Creek, Tributary #1	37 27	121 58	+1 21	+2 45	+2.6	-0.3	7.0	8.4	4.3
611	Coyote Creek, Tributary #2 <18>	37 28	121 57	+1 27	- - -	- -	- -	- -	- -	- -
613	Coyote Creek, Tributary #3 <18>	37 28	121 57	+1 23	- - -	- -	- -	- -	- -	- -
615	Sausalito	37 51	122 29	+0 10	+0 14	-0.3	0.0	3.8	5.6	3.0
617	Sausalito, Corps of Engineers Dock	37 52	122 30	+0 11	+0 21	-0.2	0.0	3.9	5.6	3.1
619	Angel Island (west side)	37 52	122 27	+0 13	+0 21	-0.2	0.0	3.9	5.6	3.0
621	Angel Island, East Garrison	37 52	122 25	+0 16	+0 20	+0.1	0.0	4.2	5.9	3.2
623	Point Chauncey	37 54	122 27	+0 28	+0 32	-0.2	0.0	3.9	5.6	3.0
625	Berkeley	37 52	122 18	+0 21	+0 38	+0.1	0.0	4.2	5.9	3.2
627	Point Isabel	37 54	122 19	+0 23	+0 33	+0.1	0.0	4.2	5.9	3.2
629	Richmond Inner Harbor	37 55	122 22	+0 25	+0 36	0.0	0.0	4.2	5.8	3.2
631	Cheveron Oil Company Pier	37 56	122 24	+0 29	+0 36	0.0	0.0	4.2	5.9	3.2
633	Point Orient	37 58	122 26	+0 47	+0 52	0.0	0.0	4.1	5.8	3.2
635	Corte Madera Creek	37 57	122 31	+0 37	+0 52	-0.1	0.0	4.0	5.7	3.1
637	Point San Quentin	37 57	122 28	+0 39	+0 50	-0.2	-0.1	4.0	5.7	3.1
	San Pablo Bay									
639	Point San Pedro	37 59	122 27	+0 59	+1 01	+0.1	0.0	4.3	5.9	3.2
641	Pinole Point	38 01	122 22	+1 13	+1 25	+0.1	-0.1	4.3	5.9	3.2
643	Hercules	38 01	122 18	+1 25	+1 49	-0.1	-0.2	4.2	5.7	3.0
645	Petaluma River entrance	38 07	122 30	+1 22	+2 11	+0.1	-0.1	4.4	5.9	3.2
647	Lakeville, Petaluma River	38 12	122 34	+1 59	+2 50	+0.5	-0.2	4.8	6.2	3.3
649	Upper drawbridge, Petaluma River	38 14	122 37	+2 10	+3 10	+0.7	-0.2	5.0	6.4	3.4
651	Gallinas Creek	38 01	122 30	+1 11	+1 30	+0.1	-0.1	4.3	5.9	3.1
653	Hog Island, San Antonio Creek	38 09	122 33	+1 47	+2 36	+0.3	-0.2	4.7	6.1	3.2
655	Sonoma Creek	38 09	122 24	+1 31	+2 34	-0.2	-0.3	4.2	5.6	3.0
657	Wingo, Sonoma Creek	38 13	122 26	+2 12	+3 11	+0.1	-0.3	4.5	5.9	3.1
	Carquinez Strait									
659	Mare Island	38 04	122 15	+1 36	+2 00	-0.3	-0.2	4.0	5.5	2.9
661	Mare Island Strait	38 06	122 16	+1 47	+2 14	-0.1	-0.2	4.2	5.7	3.0
663	Edgerley Island, Napa River	38 12	122 19	+2 02	+2 29	+0.3	-0.3	4.7	6.1	3.2
665	Brazos Drawbridge, Napa River	38 12	122 18	+2 02	+2 29	+0.7	-0.2	5.0	6.5	2.5
667	Napa, Napa River	38 18	122 17	+2 16	+2 52	+1.4	0.0	5.5	7.1	3.8
669	Selby	38 03	122 15	+1 29	+2 04	+0.6	0.0	4.7	6.3	3.4
671	Crockett	38 04	122 13	+1 39	+2 03	-0.2	-0.2	4.0	5.5	3.0
673	Benicia	38 03	122 08	+2 11	+2 34	-0.6	-0.3	3.8	5.1	2.7
675	Suisun Point	38 02	122 07	+2 08	+2 36	-0.7	-0.3	3.7	5.0	2.6
	Suisun Bay									
677	Suisun Slough entrance	38 08	122 04	+2 45	+3 32	-1.1	-0.4	3.4	4.6	2.4
679	Pierce Harbor, Goodyear Slough	38 08	122 06	+3 04	+3 46	-1.1	-0.4	3.4	4.5	2.4
681	Joice Island, Suisun Slough	38 11	122 03	+3 00	+3 49	-0.8	-0.4	3.7	4.8	2.5
683	Suisun City, Suisun Slough	38 14	122 02	+3 12	+4 08	-0.7	-0.4	3.8	5.0	2.6
685	Port Chicago, Suisun Bay	38 03	122 02	+2 36	+3 08	-1.0	-0.4	3.5	4.7	2.4
687	Montezuma Slough Bridge	38 11	121 59	+3 09	+3 52	-0.9	-0.4	3.6	4.8	2.5
689	Bradmoor Island, Nurse Slough	38 11	121 55	+3 30	+4 12	-0.6	-0.4	3.9	5.2	2.7
691	Meins Landing, Montezuma Slough	38 08	121 54	+3 29	+4 16	-1.0	-0.4	3.6	4.7	2.5
693	Montezuma Slough	38 05	121 53	+3 47	+4 33	-1.5	-0.5	3.1	4.2	2.1
695	Point Buckler	38 06	122 01	+2 40	+3 24	-0.3	-0.3	4.1	5.5	2.8
697	Mallard Island Ferry Wharf	38 03	121 55	+3 26	+4 03	-1.7	-0.5	2.9	4.0	2.0
699	Pittsburg, New York Slough	38 02	121 53	+3 30	+4 13	-1.7	-0.5	2.9	4.0	2.0
	San Joaquin River									
701	Antioch	38 01	121 49	+4 05	+4 45	*0.62	*0.52	2.7	3.7	1.9
703	Threemile Slough entrance	38 05	121 41	+4 54	+5 54	*0.60	*0.45	2.6	3.6	1.8

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	San Joaquin River-Continued Time meridian, 120°W			on SAN FRANCISCO, p.72						
705	Prisoners Point	38 04	121 33	+5 53	+6 45	*0.60	*0.45	2.6	3.5	1.8
707	Wards Island	38 03	121 30	+6 16	+6 57	*0.58	*0.36	2.5	3.4	1.7
709	Blackslough Landing	38 00	121 25	+6 32	+7 21	*0.62	*0.36	2.7	3.6	1.8
711	Stockton	37 58	121 17	+6 37	+7 39	*0.68	*0.43	3.1	4.0	2.0
	Mokelumne River									
713	Georgiana Slough entrance	38 08	121 35	+6 05	+6 51	*0.54	*0.38	2.4	3.2	1.6
715	Terminous, South Fork	38 07	121 30	+6 25	+7 17	*0.58	*0.36	2.5	3.4	1.7
717	New Hope Bridge <4>	38 14	121 29	+6 49	+7 58	*0.62	*0.45	2.7	3.6	1.8
719	Bishop Cut, Disappointment Slough	38 03	121 25	+6 43	+7 18	*0.66	*0.43	2.9	3.9	2.0
721	False River	38 03	121 39	+5 16	+5 51	*0.55	*0.42	2.4	3.3	1.7
723	Irish Landing, Sand Mound Slough	38 02	121 35	+5 56	+6 36	*0.62	*0.45	2.7	3.6	1.8
725	Orwood, Old River	37 56	121 34	+6 59	+7 35	*0.63	*0.45	2.8	3.7	1.9
727	Holt, Whiskey Slough	37 56	121 26	+6 45	+7 41	*0.67	*0.45	3.0	3.9	2.0
728	Border Highway Bridge, Old River	37 53	121 34	+7 11	+7 41	*0.53	*0.40	2.3	3.2	1.6
729	Borden Highway Bridge, Middle River	37 54	121 29	+7 22	+7 59	*0.54	*0.37	2.4	3.2	1.6
731	Grant Line Canal (drawbridge)	37 49	121 27	+8 41	+9 22	*0.63	*0.45	2.8	3.7	1.9
	Sacramento River									
733	Collinsville	38 04	121 51	+3 43	+4 26	*0.65	*0.55	2.8	3.8	2.0
735	Threemile Slough	37 06	121 42	+4 20	+5 04	*0.69	*0.55	3.0	4.0	2.1
737	Rio Vista <4>	38 09	121 42	+4 05	+5 13	*0.81	*0.55	3.6	4.7	2.4
739	Steamboat Slough, Snug Harbor Marina	38 12	121 37	+4 55	+5 54	*0.67	*0.42	3.0	4.0	2.0
741	Snodgrass Slough	38 16	121 29	+7 31	+8 42	*0.40	*0.27	1.8	2.5	1.2
743	Clarksburg <4>	38 25	121 31	+6 25	+8 04	*0.50	*0.27	2.3	2.9	1.4
745	Sacramento <4>	38 35	121 30	+7 34	+9 34	*0.50	*0.27	2.3	2.9	1.4
	Outer Coast									
747	Bolinas Bay	37 54	122 41	-0 25	-0 11	-0.1	0.0	4.0	5.7	3.1
749	Bolinas Lagoon	37 55	122 41	-0 11	+0 37	-1.6	-0.4	3.0	4.3	2.2
751	Point Reyes	38 00	122 58	-0 50	-0 26	-0.1	0.0	4.0	5.8	3.2
753	Tomales Bay entrance	38 14	122 59	-0 12	+0 20	*0.87	*0.91	3.5	5.2	2.7
755	Blakes Landing, Tomales Bay	38 11	122 55	+0 32	+1 15	-0.7	-0.2	3.6	5.2	2.7
757	Marshall, Tomales Bay	38 10	122 54	+0 38	+1 16	-0.6	-0.1	3.6	5.4	2.8
759	Inverness, Tomales Bay	38 06	122 51	+0 40	+1 24	-0.6	-0.2	3.7	5.3	2.8
761	Bodega Harbor entrance	38 18	123 03	-0 38	-0 16	-0.2	+0.1	3.8	5.7	3.1
763	Fort Ross	38 31	123 15	-0 51	-0 30	-0.2	0.0	3.9	5.7	3.0
765	Arena Cove	38 55	123 43	-0 40	-0 17	0.0	0.0	4.0	5.9	3.2
767	Point Arena	38 57	123 44	-0 42	-0 21	-0.1	0.0	4.0	5.8	3.1
769	Albion	39 14	123 46	-0 31	-0 19	-0.1	0.0	4.0	5.8	3.1
771	Little River Harbor	39 16	123 47	-0 31	-0 19	-0.1	0.0	4.0	5.8	3.1
773	Mendocino, Mendocino Bay	39 18	123 48	-0 38	-0 21	-0.1	0.0	4.0	5.8	3.1
775	Fort Bragg Landing	39 27	123 49	-0 30	-0 20	0.0	0.0	4.1	5.8	3.1
777	Noyo River	39 25	123 48	-0 31	-0 12	+0.1	+0.1	4.1	6.0	3.2
779	Westport	39 38	123 47	-0 31	-0 22	-0.1	0.0	4.0	5.8	3.1
781	Shelter Cove	40 02	124 04	-0 39	-0 17	+0.2	+0.1	4.2	6.0	3.3
783	Cape Mendocino	40 26	124 25	-0 28	+0 01	-0.1	0.0	4.0	5.7	3.1
				on HUMBOLDT BAY, p.76						
785	Eel River entrance	40 38	124 19	-0 31	-0 16	-0.6	0.0	4.4	6.3	3.4
	Humboldt Bay									
787	Entrance	40 46	124 15	-0 09	+0 07	-0.7	0.0	4.3	6.2	3.3
789	HUMBOLDT BAY (North Spit)	40 46	124 13	Daily predictions				5.0	6.9	3.7
791	Fields Landing	40 43	124 13	-0 10	-0 02	-0.1	0.0	4.9	6.8	3.7
793	Hookton Slough	40 41	124 13	+0 15	+0 25	-0.2	0.0	4.8	6.6	3.6
794	Elk River Railroad Bridge <18>	40 45	124 12	+0 10	+1 26	-1.8	-0.9	4.0	5.1	2.4
795	Bucksport	40 47	124 12	+0 05	+0 02	+0.1	0.0	5.0	7.0	3.8
796	Eureka	40 48	124 10	+0 17	+0 07	+0.4	0.0	5.3	7.3	3.9
797	Eureka Slough Bridge	40 48	124 08	+0 23	+0 06	+0.5	0.0	5.5	7.4	4.0
799	Samoa	40 50	124 11	+0 19	+0 07	+0.4	0.0	5.4	7.3	4.0
801	Arcata Wharf	40 51	124 07	+0 48	+0 54	+0.1	+0.1	5.0	7.0	3.8
803	Trinidad Harbor	41 03	124 09	-0 25	-0 13	-0.2	0.0	4.9	6.7	3.6
805	Crescent City	41 45	124 11	-0 26	-0 14	+0.1	0.0	5.1	7.0	3.8
	OREGON									
807	Brookings, Chetco Cove	42 03	124 17	-0 25	-0 10	+0.1	0.0	5.1	6.9	3.7
809	Wedderburn, Rogue River	42 26	124 25	-0 17	+0 02	-0.2	-0.1	4.9	6.7	3.6
811	Port Orford	42 44	124 30	-0 19	-0 05	+0.4	+0.1	5.3	7.3	3.9
813	Bandon, Coquille River	43 07	124 25	-0 03	+0 14	+0.1	-0.1	5.2	7.0	3.7
	Coos Bay									
815	Charleston	43 21	124 19	+0 04	+0 16	+0.7	0.0	5.7	7.5	4.1
817	Empire	43 24	124 17	+0 46	+1 06	-0.2	-0.1	4.9	6.7	3.5
819	Coos Bay	43 23	124 13	+1 35	+1 44	+0.5	-0.1	5.6	7.3	3.9
	Umpqua River									
821	Entrance	43 41	124 12	+0 14	+0 19	+0.1	0.0	5.1	6.9	3.7
823	Gardiner	43 44	124 07	+1 05	+1 25	-0.1	-0.2	5.1	6.7	3.5
825	Reedsport	43 42	124 06	+1 20	+1 40	-0.1	-0.2	5.1	6.7	3.6

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	OREGON-Continued Time meridian, 120°W			on HUMBOLDT BAY, p.76						
	Siuslaw River									
827	Entrance	44 01	124 08	+0 03	+0 19	+0.5	0.0	5.5	7.3	4.0
829	Florence	43 58	124 06	+0 53	+1 14	-0.2	-0.2	5.0	6.6	3.5
831	Waldport, Alsea Bay	44 26	124 04	+0 30	+0 47	+0.8	0.0	5.8	7.7	4.1
	Yaquina Bay and River									
833	Bar at entrance	44 37	124 05	+0 08	+0 25	+1.0	+0.1	5.9	7.9	4.2
835	Newport	44 38	124 03	+0 18	+0 28	+1.1	+0.1	6.0	8.0	4.3
837	Southbeach	44 38	124 03	+0 07	+0 17	+1.4	+0.1	6.3	8.3	4.5
839	Yaquina	44 36	124 01	+0 29	+0 41	+1.3	+0.1	6.2	8.2	4.4
841	Winant	44 35	124 00	+0 37	+1 02	+1.3	0.0	6.3	8.2	4.3
843	Toledo	44 37	123 56	+1 03	+1 25	+1.2	-0.1	6.3	8.1	4.2
845	Taft, Siletz Bay	44 56	124 01	+0 22	+0 59	-0.3	-0.3	5.0	6.6	3.4
847	Kernville, Siletz River	44 54	124 00	+0 58	+1 39	-0.8	-0.4	4.6	6.1	3.1
849	Nestucca Bay entrance	45 10	123 58	+0 29	+0 58	+0.7	-0.1	5.8	7.6	4.0
	Tillamook Bay									
851	Barview	45 34	123 57	+0 16	+0 42	+0.6	-0.1	5.7	7.5	3.9
853	Garibaldi	45 34	123 55	+0 48	+1 02	+0.9	0.0	5.9	7.8	4.2
855	Miami Cove	45 33	123 54	+0 49	+1 12	+0.5	-0.1	5.6	7.4	3.9
857	Bay City	45 31	123 54	+1 07	+1 46	+0.2	-0.2	5.4	7.1	3.7
859	Tillamook, Hoquarten Slough	45 28	123 51	+1 26	+3 01	-0.3	-0.5	5.2	6.6	3.3
	Nehalem River									
861	Brighton	45 40	123 56	+0 25	+0 40	+0.9	0.0	5.9	7.8	4.1
863	Nehalem	45 43	123 53	+0 51	+1 42	+0.3	-0.3	5.6	7.2	3.7
	OREGON and WASHINGTON Columbia River <5>			on ASTORIA, p.80						
865	Columbia River entrance (N. Jetty)	46 16	124 04	-0 44	-1 00	-1.0	+0.1	5.6	7.5	4.0
867	Ilwaco, Baker Bay, Wash	46 18	124 02	-0 13	+0 01	-0.8	-0.1	6.0	7.6	4.0
869	Chinook, Baker Bay, Wash	46 16	123 57	-0 13	-0 34	-0.5	0.0	6.2	7.9	4.2
871	Hungry Harbor, Wash	46 16	123 51	+0 04	-0 09	-0.2	+0.1	6.4	8.2	4.4
873	Point Adams, Oreg	46 12	123 57	-0 25	-0 38	-0.2	+0.1	6.4	8.3	4.4
875	Warrenton, Skipanon River, Oreg	46 10	123 55	-0 13	-0 19	-0.1	+0.1	6.5	8.3	4.4
877	Astoria (Youngs Bay), Oreg	46 10	123 50	-0 13	-0 14	+0.1	+0.1	6.7	8.6	4.5
879	Astoria (Port Docks), Oreg	46 11	123 52	-0 08	-0 03	-0.5	0.0	6.2	8.0	4.2
881	ASTORIA (Tongue Point), Oreg	46 12	123 46	Daily predictions				6.6	8.4	4.4
883	Settlers Point, Oreg	46 10	123 41	+0 22	+0 53	-0.5	-0.1	6.3	8.0	4.1
885	Harrington Point, Wash	46 16	123 39	+0 21	+0 52	-0.8	-0.2	6.1	7.7	3.9
887	Skamokawa, Steamboat Slough, Wash	46 16	123 27	+0 56	+1 45	- -	- -	5.6	6.9	- -
889	Cathlamet, Wash	46 12	123 23	+1 15	+2 15	- -	- -	5.2	6.4	- -
891	Wauna, Oreg	46 10	123 24	+1 17	+2 19	- -	- -	5.2	6.3	- -
893	Eagle Cliff, Wash	46 10	123 14	+1 43	+3 01	- -	- -	4.5	5.5	- -
895	Stella, Wash	46 11	123 07	+2 01	+3 30	- -	- -	4.0	4.9	- -
897	Longview, Wash	46 06	122 57	+2 27	+4 14	- -	- -	3.3	4.0	- -
899	Kalama, Wash	46 00	122 51	+2 54	+4 55	- -	- -	2.6	3.2	- -
901	Saint Helens, Oreg	45 52	122 48	+3 31	+5 44	- -	- -	2.0	2.5	- -
903	Knapp Landing, Wash	45 44	122 45	+4 26	+6 28	- -	- -	1.5	2.0	- -
905	Kelley Point, Oreg	45 39	122 46	+5 26	+7 16	- -	- -	1.4	2.0	- -
907	St. Johns, Willamette River, Oreg	45 35	122 46	+5 08	+7 26	- -	- -	1.7	2.2	- -
909	Portland, Willamette River, Oreg	45 31	122 40	+5 05	+7 37	- -	- -	1.8	2.4	- -
911	Vancouver, Wash	45 37	122 40	+5 45	+7 38	- -	- -	1.3	1.8	- -
913	Ellsworth, Wash	45 36	122 33	+6 11	+8 03	- -	- -	1.0	1.4	- -
915	Washougal, Wash	45 35	122 23	- - -	- - -	- -	- -	0.5	0.9	- -
917	Warrendale, Oreg	45 37	122 00	- - -	- -	- -	- -	0.4	0.6	- -
	WASHINGTON			on ABERDEEN, p.84						
919	Long Beach	46 21	124 03	-1 05	-0 59	*0.80	*0.80	6.2	8.1	4.4
	Willapa Bay and River									
921	Willapa Bay entrance	46 43	124 04	-0 37	-0 43	*0.80	*0.80	6.2	8.1	4.4
923	Nahcotta, Willapa Bay	46 30	124 01	+0 20	+0 16	0.0	-0.1	8.0	10.2	5.4
925	Tarlatt Slough, Willapa Bay	46 22	124 00	+0 21	+0 54	*0.91	*0.47	7.9	9.4	4.6
927	Bay Center, Palix River	46 38	123 57	-0 09	+0 04	-1.3	-0.2	6.8	8.9	4.7
929	Toke Point, Willapa Bay	46 42	123 58	-0 36	-0 19	-1.6	-0.2	6.5	8.5	4.5
931	South Bend, Willapa River	46 40	123 48	-0 04	-0 08	-0.3	-0.2	7.8	9.8	5.2
933	Raymond, Willapa River	46 41	123 45	+0 02	-0 03	-0.2	-0.1	7.8	9.9	5.3
935	Grayland	46 49	124 06	-1 05	-0 59	*0.80	*0.80	6.2	8.1	4.4
937	Westport (ocean)	46 53	124 07	-1 05	-0 56	*0.84	*0.84	6.4	8.5	4.6
	Grays Harbor									
939	Point Chehalis	46 55	124 07	-0 32	-0 43	-1.1	-0.1	6.9	9.0	4.8
941	Bay City	46 52	124 04	-0 15	-0 32	-0.9	-0.1	7.1	9.2	4.9
943	Markham	46 54	124 00	-0 19	-0 12	-0.9	-0.2	7.2	9.2	4.9
945	North Channel	46 58	123 57	-0 06	-0 01	-0.4	-0.1	7.6	9.7	5.2
947	ABERDEEN	46 58	123 51	Daily predictions				7.9	10.1	5.4
949	Montesano, Chehalis River	46 58	123 36	+1 21	+1 48	*0.80	*0.53	6.7	8.1	4.1
951	Pacific Beach	47 13	124 12	-1 02	-0 59	*0.85	*0.85	6.5	8.6	4.6
953	Point Grenville	47 18	124 16	-1 02	-0 59	*0.85	*0.85	6.5	8.6	4.6
955	Destruction Island	47 40	124 29	-1 01	-1 03	*0.87	*0.87	6.6	8.7	4.7
957	La Push, Quillayute River	47 55	124 38	-1 00	-0 47	*0.84	*0.84	6.5	8.5	4.6
959	Cape Alava (Flattery Rocks)	48 10	124 44	-0 53	-0 39	*0.81	*0.81	6.0	8.2	4.4

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Strait of Juan de Fuca <6> Time meridian, 120°W			on ABERDEEN, p.84						
961	Cape Flattery, Tatoosh Island	48 23	124 44	-0 46	-0 46	*0.80	*0.80	5.8	8.0	4.3
963	Neah Bay	48 22	124 37	-0 37	-0 35	*0.78	*0.78	5.5	7.9	4.3
965	Clallam Bay	48 16	124 18	-0 11	-0 08	*0.76	*0.76	5.0	7.7	4.3
967	Twin Rivers	48 10	123 57	+0 09	+0 11	*0.71	*0.71	4.4	7.0	4.1
				on PORT TOWNSEND, p.88						
969	Crescent Bay	48 10	123 44	-2 41	-2 02	*0.80	*0.80	4.1	6.7	4.1
971	Port Angeles	48 07	123 26	-1 33	-1 23	*0.86	*0.86	4.2	7.2	4.4
973	Dungeness	48 10	123 07	-0 54	-0 38	*0.90	*0.90	4.4	7.6	4.7
975	Sequim Bay entrance	48 05	123 03	-0 39	-0 07	*0.94	*0.94	4.8	7.9	4.8
977	Gardiner, Discovery Bay	48 04	122 55	-0 47	-0 17	*0.94	*0.94	4.8	7.9	4.8
979	Smith Island	48 19	122 50	-0 13	-0 25	*0.83	*0.83	4.2	7.0	4.5
981	Point Partridge	48 14	122 46	-0 11	-0 15	*0.92	*0.92	4.5	7.7	4.7
	Admiralty Inlet									
983	Admiralty Head	48 10	122 40	-0 11	+0 20	0.0	-0.1	5.2	8.4	5.1
985	PORT TOWNSEND	48 07	122 45	Daily predictions				5.2	8.4	5.1
987	Port Townsend (Point Hudson)	48 07	122 45	-0 11	-0 06	+0.2	0.0	5.3	8.6	5.2
989	Marrowstone Point	48 06	122 41	+0 02	+0 05	+0.4	-0.1	5.6	8.8	5.3
991	Mystery Bay, Marrowstone Island	48 03	122 41	+0 13	+0 48	-0.2	-0.1	5.0	8.2	5.0
993	Bush Point	48 02	122 36	+0 32	+1 11	+0.4	-0.1	5.6	8.8	5.3
995	Oak Bay	48 01	122 43	+0 08	+0 27	+0.9	0.0	6.0	9.4	5.6
	Hood Canal			on SEATTLE, p.92						
997	Port Ludlow	47 55	122 41	-0 28	-0 17	*0.87	*0.87	6.4	9.9	5.9
999	Port Gamble	47 51	122 35	-0 11	-0 04	*0.90	*0.90	6.7	10.3	6.1
1001	Bangor Wharf	47 45	122 44	-0 15	+0 08	-0.4	0.0	7.3	10.9	6.4
1003	Zelatched Point, Dabob Bay	47 43	122 49	-0 04	-0 01	0.0	+0.1	7.6	11.5	6.7
1005	Seabeck	47 38	122 50	+0 02	+0 07	+0.2	+0.1	7.8	11.6	6.8
1007	Pleasant Harbor	47 40	122 55	-0 09	+0 05	+0.1	+0.1	7.7	11.6	6.8
1009	Union	47 21	123 06	+0 01	+0 14	+0.3	+0.1	7.9	11.8	6.9
	Puget Sound									
1011	Hansville	47 55	122 33	-0 02	+0 08	-1.1	-0.1	6.7	10.3	6.1
1013	Point No Point	47 55	122 32	-0 11	-0 12	*0.91	*0.91	6.7	10.4	6.1
1015	Edmonds	47 49	122 23	0 00	+0 06	-0.5	0.0	7.2	10.9	6.4
1017	Port Madison	47 42	122 32	-0 03	-0 04	0.0	0.0	7.7	11.4	6.6
1019	Poulsbo, Liberty Bay	47 44	122 39	+0 07	+0 12	+0.5	+0.1	8.1	11.9	6.9
1021	Brownsville, Port Orchard	47 39	122 37	+0 07	+0 12	+0.3	0.0	8.0	11.7	6.8
1023	SEATTLE (Madison St.), Elliott Bay	47 36	122 20	Daily predictions				7.7	11.4	6.7
1025	Eighth Ave. S., Duwamish Waterway	47 32	122 19	+0 10	+0 11	-0.2	0.0	7.5	11.1	6.5
1027	Port Blakely	47 36	122 30	+0 07	+0 07	+0.1	0.0	7.8	11.5	6.7
1029	Pleasant Beach, Rich Passage	47 36	122 32	+0 06	+0 11	+0.1	0.0	7.8	11.5	6.7
1031	Bremerton, Port Orchard	47 33	122 38	+0 12	+0 16	+0.3	0.0	8.0	11.7	6.8
1033	Tracyton, Dyes Inlet	47 37	122 40	+0 35	+1 00	+0.9	0.0	8.6	12.3	7.1
1035	South Colby, Yukon Harbor	47 31	122 32	+0 06	+0 11	+0.2	0.0	7.9	11.6	6.7
1037	Des Moines	47 24	122 20	+0 08	+0 13	+0.3	0.0	8.0	11.7	6.8
1039	Burton, Quartermaster Harbor	47 23	122 28	+0 12	+0 17	+0.5	0.0	8.2	11.9	6.9
1041	Gig Harbor	47 20	122 35	+0 05	+0 15	+0.5	0.0	8.2	11.8	6.9
1043	Tacoma, Commencement Bay	47 17	122 25	+0 12	+0 10	+0.4	0.0	8.1	11.8	6.8
1045	Arletta, Hale Passage	47 17	122 39	+0 22	+0 37	+1.6	0.0	9.3	13.0	7.4
1047	Home, Von Geldern Cove, Carr Inlet	47 16	122 45	+0 32	+0 43	+2.2	+0.2	9.7	13.6	7.8
1049	Wauna, Carr Inlet	47 23	122 38	+0 19	+0 37	+1.7	0.0	9.4	13.1	7.5
1051	Steilacoom	47 10	122 36	+0 21	+0 36	+1.7	0.0	9.4	13.1	7.5
1053	Hyde Point, McNeil Island	47 12	122 39	+0 28	+0 45	+2.0	+0.2	9.5	13.4	7.7
1055	Sequalitchew Creek, Nisqually Reach	47 07	122 40	+0 29	+0 46	+2.0	+0.1	9.6	13.4	7.7
1057	Longbranch, Filucy Bay	47 13	122 45	+0 25	+0 40	+2.1	+0.1	9.7	13.5	7.7
1059	Henderson Inlet	47 09	122 50	+0 32	+0 49	+2.5	+0.2	10.0	14.0	8.0
1061	Vaughn, Case Inlet	47 20	122 46	+0 40	+0 51	+2.7	+0.2	10.2	14.1	8.1
1063	Allyn, Case Inlet	47 23	122 49	+0 26	+0 47	+2.7	0.0	10.2	14.1	8.1
1065	Walkers Landing, Pickering Passage	47 17	122 56	+0 40	+0 51	+2.8	+0.2	10.3	14.3	8.1
1067	Arcadia, Pickering Passage	47 12	122 56	+0 34	+0 55	+2.9	+0.2	10.4	14.4	8.2
1069	Shelton, Oakland Bay	47 13	123 05	+1 11	+1 55	+2.7	-0.2	10.6	14.2	7.9
1071	Burns Point, Totten Inlet	47 07	123 03	+0 41	+0 58	+3.5	+0.2	11.0	15.0	8.5
1073	Rocky Point, Eld Inlet	47 04	123 01	+0 39	+0 56	+3.2	+0.3	10.6	14.7	8.4
1075	Dofflemeyer Point, Boston Harbor	47 08	122 54	+0 44	+0 57	+3.0	+0.3	10.4	14.4	8.3
1077	Olympia, Budd Inlet	47 03	122 54	+0 30	+0 47	+3.0	+0.2	10.5	14.4	8.2
	Possession Sound and Port Susan									
1079	Mukilteo	47 57	122 18	+0 13	+0 08	-0.4	-0.1	7.4	11.0	6.4
1081	Everett	47 59	122 13	-0 10	-0 10	-0.3	0.0	7.4	11.1	6.5
1083	Tulalip	48 04	122 17	+0 07	+0 02	-0.1	0.0	7.6	11.2	6.6
1085	Kayak Point	48 08	122 22	-0 05	+0 03	-0.5	-0.1	7.3	10.9	6.3
1087	Stanwood, Stillaguamish River <7>	48 14	122 22	+0 23	+2 14	*0.62	*0.29	5.7	7.4	3.6

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Saratoga Passage and Skagit Bay Time meridian, 120°W			on SEATTLE, p.92						
1088	Sandy Point	48 02	122 23	+0 03	-0 01	-0.1	0.0	7.6	11.2	6.6
1089	Greenbank, Whidbey Island	48 06	122 34	+0 04	-0 04	-0.1	0.0	7.6	11.3	6.6
1091	Coupeville, Penn Cove	48 13	122 41	+0 04	+0 01	+0.1	0.0	7.8	11.5	6.7
1093	La Conner, Swinomish Channel <8>	48 23	122 30	+0 27	+0 38	*0.87	*0.93	6.5	10.0	5.9
1095	Ala Spit	48 24	122 35	+0 11	+0 28	*0.91	*0.91	6.9	10.5	6.1
1097	Yokeko Point, Deception Pass	48 25	122 37	+0 26	+0 38	-1.0	-0.2	6.9	10.5	6.1
1099	Cornet Bay, Deception Pass	48 24	122 37	+0 14	+0 27	*0.89	*0.89	6.6	10.2	6.0
	Rosario Strait, etc.			on PORT TOWNSEND, p.88						
1101	Reservation Bay, Fidalgo Island	48 25	122 40	-0 15	-0 05	*0.90	*0.90	4.5	7.6	4.7
1103	Aleck Bay, Lopez Island	48 26	122 51	-0 18	-0 08	*0.88	*0.88	4.2	7.4	4.6
1105	Burrows Bay (Allan Island)	48 28	122 42	+0 09	+0 03	*0.95	*0.88	5.0	8.1	4.8
1107	Anacortes, Guemes Channel	48 31	122 37	+0 22	+0 33	*0.96	*1.00	4.8	8.2	5.0
1109	Swinomish Channel ent., Padilla Bay	48 28	122 31	+0 36	+1 17	0.0	0.0	5.1	8.4	5.1
1111	Thatcher Pass	48 32	122 48	+0 31	+0 18	*0.96	*0.92	5.0	8.2	4.9
1113	Strawberry Bay, Cypress Island	48 34	122 43	+0 34	+0 52	*0.95	*0.95	4.8	8.0	4.9
1115	Peavine Pass	48 36	122 48	+0 34	+0 18	*0.98	*0.92	5.0	8.2	4.9
1117	Eagle Harbor, Cypress Island	48 35	122 42	+0 36	+0 48	*0.98	*0.92	5.0	8.2	4.9
	Bellingham Bay									
1119	Chuckanut Bay	48 40	122 30	+0 33	+0 53	0.0	-0.1	5.2	8.4	5.1
1121	Bellingham	48 45	122 30	+0 39	+1 08	+0.1	0.0	5.2	8.6	5.2
	Hale Passage									
1123	Point Migley	48 45	122 43	+0 56	+0 51	+0.1	0.0	5.2	8.6	5.2
1125	Rosario, East Sound, Orcas Island	48 39	122 52	+0 27	+1 04	*0.96	*0.96	4.9	8.1	4.9
1127	Upright Head, Lopez Island	48 34	122 53	+0 26	+0 44	*0.93	*0.93	4.6	7.8	4.8
1129	Orcas, Orcas Island	48 36	122 57	+0 33	+0 56	*0.90	*0.90	4.5	7.6	4.7
	San Juan Channel									
1131	Richardson, Lopez Island	48 27	122 54	-0 21	-0 11	*0.87	*0.87	4.2	7.3	4.5
1133	Friday Harbor, San Juan Island	48 33	123 00	+0 35	+0 56	*0.92	*0.92	4.5	7.7	4.8
	Strait of Georgia									
1135	Echo Bay, Sucia Islands	48 45	122 54	+1 01	+1 34	+0.1	0.0	5.2	8.6	5.2
1137	Ferndale	48 50	122 43	+0 49	+1 20	+0.5	0.0	5.6	9.0	5.4
1139	Blaine, Semiahmoo Bay	49 00	122 46	+0 59	+1 27	+0.9	+0.1	5.9	9.5	5.6
	Haro Strait									
1141	Kanaka Bay, San Juan Island	48 29	123 05	-0 11	-0 02	*0.86	*0.86	4.2	7.3	4.5
1143	Roche Harbor, San Juan Island	48 37	123 09	+0 29	+0 52	*0.90	*0.90	4.4	7.5	4.7
1145	Turn Point, Stuart Island	48 41	123 14	+0 24	+0 47	*0.90	*0.90	4.4	7.5	4.7
	Boundary Pass									
1147	Patos Island Wharf	48 47	122 58	+1 03	+1 30	+0.2	0.0	5.3	8.6	5.2
	BRITISH COLUMBIA Passages inside Vancouver Island <16>			on VICTORIA, p.96						
1149	Sooke, Vancouver Island	48 22	123 44	-0 11	-0 33	+0.8	+0.5	- -	6.4	6.6
1151	Esquimalt, Vancouver Island	48 26	123 26	+0 12	+0 17	0.0	-0.1	- -	6.2	6.3
1153	VICTORIA, Vancouver Island	48 26	123 23	Daily predictions				- -	6.1	6.3
				on VANCOUVER, p.100						
1155	Sidney, Haro Strait	48 39	123 24	-1 01	-1 12	*0.71	*0.61	- -	7.8	7.1
1157	Fulford Harbor, Saltspring Island	48 46	123 27	-0 55	-1 08	-3.5	-1.0	- -	8.0	7.6
1159	Active Pass, Mayne Island	48 52	123 20	-0 16	-0 30	-1.5	-0.8	- -	9.8	8.6
1161	Cowichan Bay	48 45	123 37	-0 53	-1 09	-3.0	-0.6	- -	8.0	8.1
1163	Chemainus, Stuart Channel	48 55	123 42	-0 51	-1 03	-2.2	-1.0	- -	9.3	8.3
1165	Ladysmith	48 59	123 47	-0 53	-1 02	-2.3	-0.8	- -	9.0	8.4
1167	Sand Heads, Fraser River	49 07	123 18	-0 25	-0 27	-1.2	-1.1	- -	10.4	8.7
1169	Atkinson Point, Burrard Inlet	49 19	123 15	-0 25	-0 27	-1.2	-1.1	- -	10.4	8.7
1171	VANCOUVER, Burrard Inlet	49 18	123 07	Daily predictions				- -	10.5	9.9
1173	Squamish, Howe Sound	49 41	123 10	-0 24	-0 24	-0.8	-1.2	- -	10.9	8.9
1175	Nanaimo	49 10	123 57	-0 20	-0 20	0.0	+0.1	- -	10.4	10.0
1177	Pender Harbor, Malaspina Strait	49 38	124 02	-0 22	-0 22	-1.1	-1.2	- -	10.6	8.8
1179	Comox, Baynes Sound	49 40	124 55	-0 18	-0 20	-0.4	-1.5	- -	11.6	9.0
1181	Whaletown, Cortes Island	50 06	125 03	-0 15	-0 17	+0.5	-0.2	- -	11.2	10.0
1183	Duncan Bay, Discovery Passage	50 05	125 18	-1 03	-1 16	-3.7	-1.5	- -	8.3	7.4
1185	Redonda Bay, Deer Passage	50 16	124 59	-0 07	-0 08	+1.2	+0.5	- -	11.2	10.8
1187	Yuculta, Cordero Channel	50 24	125 08	-0 59	-0 36	-0.2	+1.0	- -	9.3	10.4
1189	Waddington Harbor, Bute Inlet	50 56	124 51	-0 12	-0 08	+0.6	-0.4	- -	11.5	10.1
1191	Gowlland Harbor, Discovery Passage	50 04	125 14	-1 09	-1 18	-3.0	-0.9	- -	8.4	8.0
1193	Seymour Narrows (Canoe Pass)	50 08	125 21	-2 30	-3 30	0.0	+0.5	- -	10.0	10.0
1195	Owen Bay, Okisollo Channel	50 19	125 13	-3 01	-3 02	-1.4	-0.2	- -	9.3	8.9
				on SITKA, p.112						
1197	Turn Island, Johnstone Strait	50 21	125 29	+1 56	+2 02	+0.6	+0.9	- -	9.6	6.3
1199	Knox Bay, West Thurlow Island	50 24	125 36	+1 30	+1 40	+2.9	+3.1	- -	9.7	8.5
1201	Kelsey Bay, Johnstone Strait	50 24	125 58	+0 54	+1 05	+4.3	+3.6	- -	10.6	9.4
1203	Port Neville, Johnstone Strait	50 30	126 05	+0 54	+0 59	+5.1	+3.8	- -	11.2	9.8
1205	Port Harvey, Johnstone Strait	50 34	126 17	+0 38	+0 47	+4.0	+3.2	- -	10.7	8.9
1207	Chatham Channel (Root Point)	50 35	126 12	+0 43	+0 57	+5.1	+3.4	- -	11.6	9.5
1209	Glendale Cove, Knight Inlet	50 40	125 44	+0 21	+0 31	+6.6	+3.7	- -	12.8	10.6
1211	Farewell Harbor, Blackfish Sound	50 36	126 42	+0 37	+0 58	+3.9	+2.9	- -	10.9	8.5
1213	Blunden Harbor	50 54	127 17	+0 19	+0 20	+4.9	+3.3	- -	11.5	9.4

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° '	° '	h. m.	h. m.	ft	ft	ft	ft	ft
		N	W	on SITKA, p.112						
	BRITISH COLUMBIA-Continued Time meridian, 120°W									
1215	Alert Bay, Cormorant Island.............	50 35	126 56	+0 29	+0 35	+4.8	+3.3	- -	11.4	9.4
1217	Port Hardy, Vancouver Island............	50 43	127 29	+0 08	+0 14	+4.7	+3.3	- -	11.3	9.4
1219	Shushartie Bay, Goletas Channel.........	50 51	127 52	+0 02	+0 08	+4.0	+2.7	- -	11.2	8.7
	Vancouver Island, Southwest Coast									
1221	Port San Juan...........................	48 33	124 25	-0 11	-0 10	(*0.65+3.4)		5.0	7.2	6.8
1223	Carmanah Point..........................	48 37	124 45	-0 16	-0 14	(*0.75+2.3)		6.0	7.4	6.2
1225	Bamfield, Barkley Sound.................	48 50	125 08	-0 29	-0 23	(*0.86+2.5)		6.6	8.7	7.1
1227	Port Alberni............................	49 14	124 49	-0 20	-0 19	(*0.87+2.5)		6.7	8.6	7.1
1229	Clayoquot...............................	49 09	125 55	-0 16	-0 11	+1.7	+2.4	7.0	8.8	7.3
1231	Riley Cove..............................	49 23	126 13	-0 14	-0 09	+1.5	+2.3	6.9	8.8	7.2
1233	Nootka Sound............................	49 37	126 37	-0 14	-0 13	+1.2	+2.0	6.9	8.9	6.9
1235	Esperanza Inlet.........................	49 52	126 43	-0 16	-0 11	+2.0	+1.9	7.8	9.4	7.2
1237	Kyuquot Sound...........................	50 08	127 18	-0 11	-0 06	+1.8	+2.5	7.0	8.8	7.4
1239	Nasparti Inlet..........................	50 06	127 43	-0 09	-0 05	+2.1	+2.6	7.2	9.1	7.6
1241	Klaskish Inlet..........................	50 15	127 44	-0 06	-0 03	+2.1	+2.6	7.2	9.1	7.6
1243	Bergh Cove, Quatsino Sound..............	50 32	127 37	-0 06	-0 01	+2.7	+3.1	7.3	9.4	8.2
	Prince Rupert			on KETCHIKAN, p.104				Mean	Spring	
	Slingsby Channel									
1245	Treadwell Bay........................	51 06	127 32	+0 34	+0 46	(*0.48+2.8)		6.3	7.9	6.6
	Rivers Inlet									
1247	Wadhams..............................	51 31	127 31	+0 08	+0 15	(*0.68+3.3)		8.9	11.3	8.7
	Fitz Hugh Sound									
1249	Namu Harbor..........................	51 52	127 52	+0 18	+0 21	(*0.69+3.0)		9.0	11.3	8.5
1251	Addenbroke Island....................	51 36	127 49	+0 09	+0 21	(*0.66+3.4)		8.6	10.9	8.7
	Fisher Channel									
1253	Ocean Falls..........................	52 21	127 41	+0 09	+0 21	(*0.74+3.7)		9.5	12.0	9.6
	Campbell Island									
1255	Bella Belia, Lama Passage............	52 08	128 08	+0 11	+0 17	(*0.70+3.7)		9.1	11.8	9.3
	Milbanke Sound									
1257	Port Blackney........................	52 19	128 21	+0 11	+0 19	(*0.72+3.1)		9.3	11.8	8.9
	North Bentinck Arm									
1259	Bella Coola..........................	52 23	126 48	+0 14	+0 23	(*0.78+3.1)		10.1	13.0	9.3
	Finlayson Channel									
1261	Klemtu Passage.......................	52 36	128 31	+0 14	+0 25	(*0.72+3.8)		9.3	11.6	9.6
1263	Carter Bay...........................	52 50	128 24	+0 17	+0 23	(*0.78+3.1)		10.1	13.2	9.3
	Whale Channel									
1265	Barnard Harbor.......................	53 05	129 07	+0 24	+0 35	+0.7	+2.8	10.9	13.9	9.8
	Wright Sound									
1267	Hartley Bay..........................	53 26	129 15	+0 20	+0 31	+1.6	+3.4	11.2	14.3	10.5
	Douglas Channel									
1269	Kitimat..............................	53 59	128 42	+0 24	+0 40	+2.4	+3.6	11.8	15.1	11.0
	Gardner Canal									
1271	Kemano Bay...........................	53 31	128 07	+0 24	+0 40	+2.7	+3.6	12.1	15.5	11.2
	Grenville Channel									
1273	Lowe Inlet...........................	53 33	129 35	+0 32	+0 44	+2.8	+4.0	11.8	14.9	11.4
	Principe Channel, etc.									
1275	Port Stephens........................	53 21	129 43	+0 22	+0 32	+0.5	+3.2	10.3	13.2	9.9
1277	Port Canaveral.......................	53 35	130 09	+0 29	+0 38	+0.5	+3.2	10.3	13.2	9.9
1279	Beaver Passage.......................	53 48	130 21	+0 38	+0 50	+3.7	+3.5	13.2	17.1	11.6
	Chatam Sound									
1281	Porcher Island.......................	54 05	130 24	+0 34	+0 46	+3.6	+4.6	12.0	15.2	12.1
1283	Qlawdzeet Anchorage..................	54 12	130 46	+0 43	+0 49	+4.2	+4.3	12.9	16.6	12.3
1285	Prince Rupert........................	54 19	130 20	+0 51	+0 57	+4.6	+4.3	13.3	17.3	12.5
1287	Port Simpson.........................	54 34	130 26	+0 51	+0 57	+3.9	+4.2	12.7	16.5	12.1
	Queen Charlotte Island									
1289	Skidegate Inlet......................	53 15	132 04	+1 01	+1 07	+5.5	+4.8	13.7	17.7	13.2
1291	Tasu Sound...........................	52 45	132 01	+0 22	+0 29	(*0.58+3.6)		7.5	9.4	8.2
	BRITISH COLUMBIA and ALASKA Dixon Entrance									
	Graham Island, B.C.									
1293	Parry Passage........................	54 11	132 59	+0 20	+0 30	(*0.68+4.2)		8.9	11.2	9.6
1295	Wiah Point...........................	54 07	132 19	+0 36	+0 40	(*0.79+3.8)		10.3	12.9	10.1
1297	Masset Harbor........................	53 59	132 08	+1 01	+1 13	(*0.58+2.0)		7.6	9.5	6.6
	Time meridian, 135°W							Mean	Diurnal	
1299	Cape Muzon, Dall Island, Alaska.........	54 40	132 40	-0 15	-0 08	(*0.76+0.3)		9.9	12.1	6.4
1301	Nichols Bay, Alaska.....................	54 43	132 08	-0 09	-0 08	-2.0	-0.1	11.1	13.4	6.9
1303	Cape Chacon, Alaska.....................	54 42	132 01	-0 15	-0 05	-1.9	0.0	11.1	13.6	7.0
1305	Kelp Island Passage, Duke Island........	54 53	131 18	-0 05	+0 03	-0.8	0.0	12.2	14.6	7.6
1307	Barren Island, Alaska...................	54 45	131 21	-0 16	-0 11	-1.4	0.0	11.6	13.9	7.3
1309	Cape Fox, Alaska........................	54 46	130 51	-0 17	-0 12	-0.8	-0.2	12.4	14.6	7.5
1311	Port Tongass, Tongass Island, Alaska....	54 46	130 44	-0 17	-0 15	-0.8	-0.2	12.4	14.6	7.5
1313	Nakat Harbor, Alaska....................	54 49	130 42	0 00	+0 08	-0.7	-0.1	12.4	14.7	7.6
	Time meridian, 120°W									
1315	Haystack Island, B.C. <9>...............	54 43	130 37	+0 45	+0 49	-0.4	0.0	12.6	15.0	7.8

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° '	° '	h. m.	h. m.	ft	ft	ft	ft	ft
		N	W							
	Portland Canal, etc. Time meridian, 120°W			on KETCHIKAN, p.104						
1317	Wales Island (Cannery), Pearse Canal <9>	54 47	130 33	+0 57	+1 04	-0.1	0.0	12.9	15.3	7.9
1319	Kumeon Bay, B.C. <9>	54 43	130 14	+0 53	+0 56	+0.2	0.0	13.2	15.6	8.1
1321	Mill Bay, Nass River, B.C. <9>	55 00	129 54	+0 51	+1 17	+0.1	-0.1	13.2	15.5	8.0
	Time meridian, 135°W									
1323	Halibut Bay, Alaska <9>	55 14	130 06	-0 07	-0 05	+0.6	+0.2	13.4	16.0	8.4
	Time meridian, 120°W									
1325	Fords Cove, B.C. <9>	55 37	130 06	+0 56	+0 58	+0.8	+0.1	13.7	16.2	8.4
	Time meridian, 135°W									
1327	Davis River entrance, Alaska <9>	55 46	130 11	-0 03	0 00	+1.2	0.0	14.2	16.6	8.6
	Time meridian, 120°W									
1329	Stewart, B.C. <9>	55 55	129 48	+0 53	+0 56	+1.4	+0.1	14.3	16.8	8.7
	ALASKA Revillagigedo Channel Time meridian, 135°W									
1331	Morse Cove, Duke Island	54 55	131 15	+0 02	+0 14	-0.6	0.0	12.4	14.8	7.7
1333	Kah Shakes Cove	55 03	130 59	-0 04	+0 02	-0.4	0.0	12.6	15.0	7.8
1335	Boca de Quadra	55 07	130 48	-0 01	+0 04	-0.4	-0.1	12.7	15.0	7.7
1337	Mary Island Anchorage	55 06	131 12	-0 01	-0 08	0.0	0.0	13.0	15.4	8.0
1339	Mop Point, Thorne Arm	55 23	131 14	-0 13	-0 06	-0.2	0.0	12.8	15.2	7.9
1341	Hassler Harbor, Annette Island	55 13	131 26	-0 03	-0 04	+0.1	0.0	13.1	15.5	8.0
1343	Coon Island, George Inlet	55 28	131 30	-0 08	-0 08	-0.1	0.0	12.9	15.3	7.9
1345	Gnat Cove, Carroll Inlet	55 23	131 20	0 00	-0 07	0.0	0.0	13.0	15.4	8.0
1347	Nigelius Point, Carroll Inlet	55 34	131 22	-0 07	-0 08	0.0	0.0	13.0	15.4	8.0
	Tongass Narrows									
1349	KETCHIKAN	55 20	131 38	Daily predictions				13.0	15.4	8.0
1351	Ward Cove	55 24	131 44	-0 06	-0 03	+0.3	0.0	13.3	15.7	8.1
	Behm Canal									
1353	Alava Bay	55 14	131 08	-0 06	-0 04	-0.2	0.0	12.8	15.2	7.9
1355	Smeaton Bay (Wilson Arm)	55 22	130 38	+0 05	+0 08	+0.2	0.0	13.2	15.6	8.1
1357	Shoalwater Pass	55 26	130 55	-0 02	+0 01	+0.2	0.0	13.2	15.6	8.1
1359	Vallenar Point	55 26	131 51	-0 06	-0 08	-0.1	0.0	12.9	15.3	7.9
1361	Rudyerd Bay	55 38	130 39	0 00	+0 01	+0.3	0.0	13.3	15.7	8.1
1363	Fitzgibbon Cove	55 59	131 10	-0 06	-0 01	+0.4	0.0	13.4	15.8	8.2
1365	Burroughs Bay	56 02	131 06	-0 03	-0 01	+0.5	+0.1	13.4	15.8	8.3
1367	Bell Arm, Bell Island	55 58	131 31	-0 02	0 00	+0.6	0.0	13.6	15.9	8.3
1369	Convenient Cove, Hassler Island	55 52	131 41	-0 01	+0 01	+0.4	0.0	13.4	15.7	8.2
1371	Yes, Yes Bay	55 55	131 47	0 00	-0 01	+0.3	0.0	13.3	15.7	8.1
1373	Shrimp Bay	55 51	131 28	0 00	0 00	+0.5	0.0	13.5	15.9	8.2
1375	Traitors Cove (lower section)	55 43	131 40	+0 04	-0 02	+0.4	-0.1	13.5	15.8	8.1
1377	Traitors Cove (inside narrows)	55 44	131 37	+0 25	+1 26	*0.83	*0.47	11.3	12.9	6.3
1379	Loring, Naha Bay	55 36	131 38	-0 01	0 00	+0.4	0.0	13.4	15.7	8.2
1381	Tamgas Harbor, Annette Island	55 04	131 33	-0 13	-0 10	-0.3	-0.1	12.8	15.0	7.8
1383	Ingraham Bay, Prince of Wales Island	54 59	132 00	+0 02	+0 03	-1.0	0.0	12.0	14.4	7.5
1385	Menefee Anch., Prince of Wales Island	55 02	132 01	-0 03	+0 01	-0.9	-0.1	12.2	14.4	7.5
1387	Niblack Anchorage, Moira Sound	55 04	132 07	+0 02	+0 05	-0.8	0.0	12.2	14.6	7.6
1389	Metlakatla, Port Chester	55 08	131 34	-0 11	-0 07	-0.7	0.0	12.3	14.7	7.6
	Clarence Strait									
1391	Nehenta Bay, Gravina Island	55 10	131 48	-0 02	-0 01	-0.7	0.0	12.3	14.7	7.7
1393	Lancaster Cove, Cholmondeley Sound	55 13	132 06	+0 02	+0 01	-0.3	0.0	12.7	15.1	7.9
1395	Divide Head, Cholmondeley Sound	55 15	132 18	-0 09	-0 08	-0.3	0.0	12.7	15.1	7.9
	Kasaan Bay									
1397	Entrance	55 24	132 10	-0 02	-0 01	-0.1	-0.1	13.0	15.2	7.9
1399	Saltery Cove, Skowl Arm	55 24	132 19	+0 04	+0 02	-0.1	0.0	12.9	15.3	8.0
1401	Polk Inlet (south end)	55 22	132 29	+0 03	+0 06	+0.2	0.0	13.2	15.6	8.1
1403	Kasaan	55 32	132 24	+0 06	+0 01	0.0	0.0	13.0	15.4	8.0
1405	Karta Bay	55 34	132 35	+0 03	+0 04	+0.5	-0.1	13.6	15.8	8.2
1407	Hollis Anchorage	55 29	132 39	+0 02	-0 05	+0.2	+0.1	13.1	15.6	8.1
1409	Hadley, Lyman Anchorage	55 32	132 17	+0 10	+0 07	+0.5	-0.1	13.6	15.8	8.2
1411	Union Bay, Ernest Sound	55 45	132 12	+0 11	+0 17	+1.1	0.0	14.1	16.5	8.6
1413	Dewey Anchorage, Etolin Island	55 55	132 22	+0 13	+0 14	+0.6	-0.1	13.7	15.9	8.2
1415	Ratz Harbor, Prince of Wales Island	55 53	132 36	+0 13	+0 14	+0.6	-0.1	13.7	16.0	8.2
1417	Lake Bay	56 01	132 55	+0 09	+0 01	+0.5	-0.1	13.6	15.9	8.2
1419	Thorne Island, Whale Passage	56 04	132 58	-0 07	0 00	+0.2	0.0	13.2	15.6	8.1
1421	Exchange Cove	56 12	133 04	+0 08	+0 04	-0.4	-0.1	12.7	15.0	7.7
1423	Steamer Bay, Etolin Island	56 09	132 41	+0 08	+0 03	+0.9	-0.1	14.0	16.3	8.4
1425	Olive Cove, Zimovia Strait	56 11	132 19	+0 12	+0 14	+1.2	0.0	14.2	16.6	8.6
1427	Blake Island, Bradfield Canal	56 13	131 55	+0 10	+0 06	+1.1	-0.1	14.2	16.5	8.5
1429	Wrangell, Wrangell Island	56 28	132 23	+0 11	+0 02	+0.3	0.0	13.3	15.7	8.2
1431	Stikine River Entr., Point Rothsay	56 35	132 22	+0 27	+0 32	-1.5	+0.1	11.4	13.9	7.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Cordova Bay Time meridian, 135°W			on SITKA, p.112						
1433	Minnie Bay	54 43	132 18	-0 05	0 00	+2.7	+0.1	10.3	12.7	6.6
1435	Tah Bay	54 50	132 20	-0 04	+0 03	+2.6	+0.1	10.2	12.5	6.6
1437	Hunter Bay	54 52	132 19	-0 02	+0 03	+2.7	+0.1	10.3	12.7	6.6
1439	Kassa Inlet entrance	54 56	132 31	-0 03	+0 01	+2.6	+0.1	10.2	12.5	6.6
1441	Elbow Bay	54 54	132 39	-0 04	-0 04	+2.6	+0.1	10.2	12.6	6.6
1443	Mabel Island	55 00	132 36	-0 10	-0 01	+2.8	+0.1	10.4	12.8	6.7
1445	Keete Island, Nutkwa Inlets	55 03	132 35	-0 13	-0 05	+2.8	+0.1	10.4	12.8	6.7
1447	Keete Inlet	55 05	132 29	-0 11	-0 01	+2.9	+0.1	10.5	12.9	6.7
	Hetta Inlet									
1449	Mud Bay	55 05	132 38	-0 05	+0 01	+2.8	+0.1	10.4	12.8	6.7
1451	Copper Harbor	55 13	132 37	-0 10	-0 08	+2.8	+0.1	10.4	12.8	6.7
1453	Sulzer	55 17	132 37	-0 02	+0 08	+2.9	+0.1	10.5	12.9	6.7
	Kaigani Strait									
1455	Kalgani Harbor	54 45	132 43	-0 14	-0 08	+2.2	+0.1	9.8	11.9	6.4
1457	American Bay	54 51	132 50	+0 01	+0 01	+2.5	0.0	10.2	12.4	6.5
	Tlevak Strait									
1459	Rose Inlet	54 57	132 59	-0 07	+0 05	+2.8	0.0	10.5	12.6	6.6
1461	Kasook Inlet, Sukkwan Island	55 01	132 47	-0 13	-0 05	+2.8	0.0	10.5	12.6	6.6
1463	McFarland Islands	55 04	132 56	-0 08	-0 02	+2.7	+0.1	10.3	12.4	6.6
1465	View Cove	55 05	133 01	-0 02	+0 02	+2.8	0.0	10.5	12.7	6.6
1467	South Pass, Sukkwan Strait	55 10	132 52	-0 02	+0 02	+2.9	+0.1	10.5	12.9	6.8
1469	Saltery Point	55 11	132 48	-0 08	-0 05	+2.9	+0.1	10.5	12.9	6.8
1471	North Pass, West End	55 12	132 56	-0 12	-0 06	+3.0	+0.1	10.6	13.0	6.8
1473	Natalia Point	55 14	133 03	-0 05	+0 01	+2.9	+0.1	10.5	12.9	6.8
1475	Soda Bay	55 16	132 58	+0 03	+0 07	+3.0	+0.1	10.6	13.0	6.8
1477	Tlevak Narrows	55 16	133 07	-0 07	-0 01	+1.7	+0.1	9.3	11.7	6.2
	Dall Island, west coast									
	Cape Muzon (see Index)	54 40	132 40	- - -	- - -	- -	- -	- -	- -	- -
1479	Security Cove	54 45	132 51	-0 20	-0 24	+1.0	0.0	8.7	10.8	5.7
1481	Forrester Island	54 50	133 32	-0 20	-0 24	+0.9	-0.1	8.7	10.7	5.6
1483	Gooseneck Harbor	54 53	133 00	-0 22	-0 13	+0.8	0.0	8.5	10.7	5.6
1485	Sakie Bay	55 04	133 12	+0 01	+0 05	+0.3	0.0	8.0	10.3	5.4
1487	Sea Otter Harbor	55 07	133 10	-0 04	+0 04	-0.2	-0.1	7.6	9.7	5.1
	Meares Passage to Davidson Inlet									
	Meares Passage									
1489	Diver Islands	55 11	133 17	-0 11	-0 07	-0.1	-0.1	7.7	9.8	5.1
1491	Eagle Point	55 14	133 14	-0 09	-0 05	+0.2	-0.2	8.1	10.3	5.2
1493	Meares Island, south side	55 15	133 11	-0 08	-0 04	+0.6	-0.1	8.4	10.6	5.5
	Ulloa Channel									
1495	Ulloa Island	55 16	133 09	-0 07	-0 03	+0.7	-0.1	8.5	10.7	5.5
1497	Waterfall Cannery	55 18	133 15	-0 10	-0 09	+0.3	-0.1	8.1	10.2	5.3
1499	Cape Flores	55 21	133 19	-0 13	-0 09	-0.2	-0.1	7.6	9.7	5.1
	Bucareli Bay									
1501	Port Santa Cruz, Suemez Island	55 17	133 25	-0 16	-0 13	0.0	-0.1	7.8	9.9	5.2
1503	Diamond Point	55 24	133 20	-0 11	-0 07	0.0	-0.1	7.8	9.9	5.2
1505	Craig	55 29	133 09	-0 08	-0 05	+0.1	-0.1	7.9	10.0	5.2
1507	Cruz Pass, San Fernando Island	55 32	133 19	-0 15	-0 12	+0.1	-0.1	7.9	10.1	5.2
	Gulf of Esquibel									
1509	Steamboat Bay, Noyes Island	55 33	133 38	-0 20	-0 08	+0.2	-0.1	8.0	10.1	5.3
1511	Anguilla Island	55 41	133 35	-0 18	-0 14	+0.4	-0.1	8.2	10.3	5.4
1513	Warm Chuck Inlet, Tonowek Bay	55 44	133 30	-0 15	-0 11	+0.2	-0.1	8.0	10.2	5.3
	Davidson Inlet									
1515	Port Alice, Heceta Island	55 49	133 36	-0 20	-0 14	+0.9	0.0	8.6	10.8	5.7
1517	Karheen, Sea Otter Sound	55 49	133 19	-0 13	-0 09	+0.6	-0.1	8.4	10.6	5.5
1519	Tuxekan Passage (south end)	55 46	133 17	-0 07	-0 04	+0.8	-0.1	8.6	10.8	5.6
1521	Tuxekan, 0.5 mile south of	55 53	133 15	-0 17	-0 07	+0.9	-0.1	8.7	10.9	5.6
1523	Tuxekan Passage (north end)	55 55	133 17	-0 12	-0 04	+0.9	-0.1	8.7	10.8	5.6
1525	El Capitan Island	55 56	133 20	-0 11	-0 10	+0.9	-0.1	8.7	10.8	5.6
1527	Cyrus Cove, Sea Otter Sound	55 55	133 24	-0 16	-0 12	+1.1	0.0	8.8	10.9	5.8
1529	Marble Passage	55 57	133 26	-0 14	-0 09	+1.0	0.0	8.7	10.9	5.8
1531	Marble Island	56 00	133 28	-0 19	-0 15	+0.8	-0.1	8.6	10.7	5.6
1533	Holbrook, Kosciusko Island	56 02	133 30	-0 10	-0 06	+0.9	-0.1	8.7	10.8	5.6
1535	Edna Bay	55 57	133 40	-0 20	-0 08	+0.9	0.0	8.6	10.8	5.7
	Sumner Strait									
1537	Coronation Island	55 54	134 07	-0 16	-0 17	+0.8	0.0	8.5	10.7	5.6
1539	Pole Anchorage, Kosciusko Island	55 57	133 49	-0 22	-0 22	+1.4	-0.1	9.2	11.4	5.9
1541	Port McArthur, Kuiu Island	56 04	134 07	-0 11	-0 07	+0.6	-0.1	8.4	10.6	5.5
1543	Kell Bay, Affleck Canal, Kuiu Island	56 09	134 08	+0 01	+0 01	+1.3	0.0	9.0	11.2	5.9
1545	Point St. Albans	56 05	133 58	-0 17	-0 13	+1.4	0.0	9.1	11.3	5.9
1547	Shakan Bay Entrance	56 08	133 37	-0 13	-0 12	+1.8	0.0	9.5	11.7	6.2
1549	Shakan, Kosciusko Island	56 08	133 28	-0 09	-0 10	+1.9	-0.1	9.7	11.7	6.2
1551	El Capitan Passage	56 04	133 19	-0 05	+0 02	+0.9	-0.1	8.7	10.8	5.6
1553	Port Beauclerc, Kuiu Island	56 17	133 57	-0 14	-0 12	+1.9	-0.1	9.7	11.9	6.2
1555	Port Protection, Prince of Wales Island	56 19	133 36	-0 13	-0 11	+2.4	0.0	10.1	12.4	6.4
1557	Reid Bay	56 23	133 53	-0 11	-0 19	+2.5	0.0	10.2	12.4	6.5
1559	Sumner Island	56 25	133 48	-0 19	-0 12	+2.6	0.0	10.3	12.6	6.6

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Sumner Strait-Continued Time meridian, 135°W			on KETCHIKAN, p.104						
1561	Red Bay, Prince of Wales Island	56 18	133 19	+0 03	+0 07	-0.8	0.0	12.2	14.6	7.6
1563	Level Islands	56 28	133 06	+0 03	+0 04	-0.4	0.0	12.6	15.0	7.8
1565	Butterworth Island, Duncan Canal	56 32	133 04	-0 04	+0 03	0.0	0.0	13.0	15.3	8.0
1567	Duncan Canal, Kupreanof Island	56 34	133 04	+0 15	+0 16	-0.2	-0.1	12.9	15.2	7.8
1569	Grief Island, Duncan Canal	56 37	133 03	+0 15	+0 12	+0.1	-0.1	13.2	15.4	8.0
1571	Castle Islands, Duncan Canal	56 39	133 09	+0 27	+0 12	+0.1	-0.1	13.2	15.5	8.0
1573	St.John Harbor, Zarembo Island	56 26	132 57	+0 09	+0 05	-0.7	-0.2	12.5	14.6	7.6
1575	Greys Island	56 31	132 33	+0 06	+0 04	+0.2	0.0	13.2	15.6	8.1
	Wrangell Narrows									
1577	Point Lockwood, Woewodski Island	56 33	132 58	+0 20	+0 15	+0.2	+0.1	13.1	15.7	8.1
1579	Finger Point, Lindenberg Peninsula	56 41	132 57	+0 29	+0 41	+1.2	0.0	14.2	16.7	8.6
1581	Anchor Point	56 38	132 56	+0 20	+0 35	+0.6	0.0	13.6	16.0	8.3
1583	Petersburg	56 49	132 57	+0 09	+0 26	+0.3	-0.1	13.4	15.7	8.1
	Keku Strait									
1585	Monte Carlo Island	56 32	133 46	+0 02	+0 03	-2.8	-0.1	10.3	12.5	6.6
1587	Seclusion Harbor, Kuiu Island	56 33	133 52	+0 05	+0 02	-3.0	-0.2	10.2	12.3	6.4
1589	Beck Island	56 39	133 43	+0 08	+0 31	-1.6	-0.1	11.5	13.8	7.1
1591	The Summit	56 41	133 44	+0 31	+0 37	+0.3	+0.1	13.2	15.7	8.2
1593	Entrance Island	56 49	133 47	+0 22	+0 31	-0.7	0.0	12.3	14.7	7.6
1595	Port Camden, Kuiu Island	56 44	133 55	+0 03	+0 04	-1.5	0.0	11.5	13.9	7.2
1597	Hamilton Bay, Kupreanof Island	56 55	133 50	+0 03	+0 04	-1.6	0.0	11.4	13.8	7.2
1599	Kake	56 58	133 56	+0 05	+0 12	-1.4	-0.1	11.7	14.0	7.3
	Frederick Sound			on JUNEAU, p.108						
1601	Dry Strait	56 37	132 34	-0 18	-0 03	-0.2	0.0	13.5	16.1	8.3
1603	Cosmos Point	56 40	132 37	-0 19	-0 14	-0.6	0.0	13.1	15.6	8.1
1605	Ideal Cove, Mitkof Island	56 40	132 38	-0 09	-0 05	-0.2	0.0	13.5	16.1	8.3
1607	Brown Cove	56 53	132 48	-0 14	-0 10	-0.3	-0.1	13.5	15.8	8.2
1609	Thomas Bay	57 00	132 47	+0 07	+0 07	-0.8	-0.1	13.0	15.4	8.0
1611	Portage Bay, Kupreanof Island	57 00	133 19	-0 19	-0 15	-0.7	0.0	13.0	15.5	8.1
1613	Cleveland Passage, Whitney Island	57 13	133 30	-0 01	+0 03	-1.2	-0.1	12.6	15.0	7.8
1615	Pybus Bay, Admiralty Island	57 18	134 08	+0 03	-0 02	-1.9	-0.1	11.9	14.3	7.4
1617	Eliza Harbor, Liesnoi Island	57 10	134 17	-0 19	-0 19	-1.9	-0.1	11.9	14.3	7.4
1619	Saginaw Bay, Kuiu Island	56 54	134 18	-0 24	-0 21	-2.2	-0.1	11.6	14.0	7.3
	Stephens Passage									
1621	Port Houghton, Robert Islands	57 18	133 28	-0 21	-0 17	-0.8	-0.1	13.0	15.4	8.0
1623	Hobart Bay	57 24	133 25	-0 06	+0 03	-1.1	-0.1	12.7	15.1	7.8
1625	Good Island, Gambier Bay	57 29	133 54	-0 03	+0 04	-1.4	-0.1	12.4	14.8	7.7
1627	Windham Bay	57 33	133 30	0 00	0 00	-1.1	-0.1	12.7	15.1	7.8
1629	Rasp Ledge, Seymour Canal	57 41	134 02	+0 06	+0 05	-0.7	+0.1	12.9	15.6	8.2
1631	Windfall Harbor, Seymour Canal	57 52	134 16	+0 14	+0 18	-0.2	0.0	13.5	16.0	8.3
1633	Holkham Bay, Wood Spit	57 43	133 35	+0 03	+0 06	-0.8	-0.1	13.0	15.4	8.0
1635	Port Snettisham, Point Styleman	57 58	133 53	-0 12	-0 06	-0.4	-0.1	13.4	15.8	8.2
1637	Taku Harbor	58 04	134 01	+0 06	+0 03	-0.7	-0.1	13.1	15.5	8.0
1639	Greely Point, Taku Inlet	58 13	134 04	-0 01	-0 04	-0.6	-0.1	13.2	15.7	8.1
1641	Taku Point, Taku Inlet	58 24	134 01	+0 14	+0 13	+0.4	0.0	14.1	16.7	8.6
1643	JUNEAU	58 18	134 25	Daily predictions				13.7	16.3	8.4
1645	Fritz Cove, Douglas Island	58 19	134 36	-0 01	+0 05	-0.3	-0.1	13.5	15.9	8.2
1647	Auke Bay	58 23	134 39	-0 06	-0 03	-0.4	0.0	13.3	15.9	8.2
	Lynn Canal									
1649	Funter, Funter Bay	58 15	134 54	0 00	+0 01	-1.1	0.0	12.6	15.1	7.9
1651	Barlow Cove, Mansfield Peninsula	58 20	134 53	-0 13	-0 06	-1.1	-0.3	12.9	15.0	7.8
1653	William Henry Bay	58 43	135 14	+0 02	+0 09	-0.5	0.0	13.2	15.7	8.2
1655	Pyramid Harbor, Chilkat Inlet	59 11	135 28	-0 13	-0 12	0.0	-0.2	13.9	16.3	8.3
1657	Haines, Chilkoot Inlet	59 14	135 26	-0 09	-0 06	+0.5	0.0	14.2	16.8	8.7
1659	Skagway, Taiya Inlet	59 27	135 19	+0 01	+0 03	+0.4	0.0	14.1	16.7	8.7
	Chatham Strait			on SITKA, p.112						
1661	Port Alexander, Baranof Island	56 15	134 39	0 00	-0 05	+1.4	+0.1	9.0	11.4	6.0
1663	Port Conclusion, Baranof Island	56 15	134 40	-0 09	-0 05	+1.4	+0.1	9.0	11.4	6.0
1665	Port Walter, Baranof Island	56 23	134 40	+0 04	+0 13	+1.5	+0.1	9.1	11.5	6.0
1667	Table Bay, Kuiu Island	56 10	134 15	-0 15	-0 13	+1.1	0.0	8.8	11.1	5.8
1669	Port Malmesbury, Kuiu Island	56 18	134 14	+0 04	+0 13	+1.2	+0.1	8.8	11.2	5.9
1671	Tebenkof Bay, Kuiu Island	56 25	134 08	+0 04	+0 11	+1.8	+0.1	9.4	11.8	6.2
1673	Red Bluff Bay	56 51	134 43	-0 02	+0 12	+2.7	+0.2	10.2	12.7	6.7
1675	Security Bay, Kuiu Island	56 51	134 21	-0 05	-0 01	+3.6	+0.2	11.1	13.6	7.1
				on JUNEAU, p.108						
	Frederick Sound (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1677	Baranof, Warm Spring Bay	57 05	134 50	-0 07	-0 04	-2.8	-0.1	11.0	13.4	7.0

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
				Time		Height				
		Lat.	Long.	High water	Low water	High water	Low water	Mean	Diurnal	
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Chatham Strait-Continued Time meridian, 135°W			on JUNEAU, p.108						
1679	Whitewater Bay, Admiralty Island	57 14	134 36	-0 19	-0 15	-2.0	+0.3	11.4	13.9	7.6
1681	Kasnyku Bay	57 13	134 52	-0 10	-0 06	-2.4	-0.1	11.4	13.8	7.2
1683	Point Thatcher	57 25	134 51	-0 15	-0 11	-1.9	+0.2	11.6	14.2	7.6
	Peril Strait (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1685	Killisnoo	57 28	134 34	-0 06	-0 04	-2.1	0.0	11.6	14.1	7.4
	Kootznahoo Inlet									
1687	Favorite Bay	57 29	134 33	+0 11	+0 15	-2.8	+0.3	10.6	13.0	7.2
1689	Mitchell Bay	57 32	134 24	+1 22	+1 31	*0.67	*0.62	9.2	11.0	5.6
1691	Freshwater Bay, Chichagof Island	57 51	135 01	-0 08	0 00	-1.5	+0.3	11.9	14.4	7.8
	Icy Strait (see Index)	- - -	- - -	- - -	- - -	- -	- -	- -	- -	- -
1693	Tenakee Springs, Tenakee Inlet	57 47	135 13	-0 04	+0 05	-1.5	-0.1	12.3	14.7	7.7
	Baranof Island, west coast			on SITKA, p.112						
1695	Cape Ommaney	56 10	134 40	-0 10	-0 06	0.0	+0.1	7.6	9.9	5.3
1697	Port Banks, Whale Bay	56 34	134 59	-0 09	-0 07	+0.1	+0.1	7.7	9.9	5.3
	Sitka Sound									
1699	Symonds Bay, Biorka Island	56 51	135 31	-0 15	-0 16	-0.1	0.0	7.6	9.8	5.2
1701	SITKA	57 03	135 20	Daily predictions				7.7	9.9	5.3
1703	Dog Point, Lisianski Peninsula	57 10	135 25	-0 04	0 00	+0.1	0.0	7.8	10.0	5.3
1705	Olga Point, Olga Strait	57 14	135 32	0 00	+0 14	0.0	0.0	7.7	9.9	5.3
	Kruzof Island									
1707	Shoals Point	57 02	135 38	-0 08	-0 13	-0.1	0.0	7.6	9.8	5.2
1709	Gilmer Bay	57 13	135 50	-0 06	-0 02	+0.4	+0.1	8.0	10.1	5.5
	Neva Strait									
1711	Whitestone Narrows	57 15	135 34	-0 01	+0 03	+0.1	0.0	7.8	9.9	5.3
1713	Zeal Point	57 17	135 36	0 00	+0 04	+0.3	0.0	8.0	10.1	5.4
	Salisbury Sound and Peril Strait									
1715	Klokachef Island	57 25	135 53	-0 10	-0 06	-0.1	+0.1	7.5	9.9	5.2
1717	Scraggy Point	57 20	135 43	-0 09	0 00	-0.1	+0.1	7.5	9.8	5.2
1719	Kakul Narrows	57 22	135 41	+0 04	+0 11	+0.1	0.0	7.8	10.0	5.3
1721	Haley Anchorage, Fish Bay	57 22	135 37	+0 03	+0 12	+0.2	+0.1	7.8	10.1	5.4
1723	Serguis Narrows	57 25	135 38	+0 17	+0 27	+3.3	+0.1	10.9	13.3	6.9
1725	Bear Bay	57 25	135 35	+0 18	+0 29	+3.7	+0.2	11.2	13.6	7.2
				on JUNEAU, p.108						
1727	Povorotni Island, Pogibshi Point	57 31	135 33	-0 09	+0 02	-1.3	-0.1	12.5	14.9	7.7
1729	Nismeni Cove	57 34	135 25	-0 15	-0 03	-1.3	-0.1	12.5	15.0	7.7
1731	Point Elizabeth	57 31	135 17	-0 15	-0 05	-1.6	0.0	12.1	14.7	7.6
1733	Lindenburg Head	57 27	135 02	-0 15	-0 05	-1.8	0.0	11.9	14.5	7.5
1735	Fairway Island	57 27	134 53	-0 15	-0 05	-2.1	0.0	11.6	14.2	7.4
	Chichagof Island, west coast			on SITKA, p.112						
1737	Falcon Arm, Slocum Arm	57 33	135 56	-0 03	-0 02	+0.6	+0.2	8.1	10.2	5.6
1739	Elbow Passage, Klag Bay	57 37	136 05	+0 10	+0 18	+0.8	+0.1	8.4	10.7	5.7
1741	Kimshan Cove, Ogden Passage	57 41	136 06	+0 07	+0 11	+0.2	+0.1	7.8	10.1	5.4
1743	Dry Pass, Hill Island	57 46	136 17	+0 01	+0 05	+0.2	0.0	7.9	10.2	5.3
	Lisianski Strait and Inlet									
1745	Canoe Cove, North Pass	57 51	136 25	+0 04	+0 04	+0.1	-0.1	7.9	10.1	5.2
1747	Stag Bay	57 55	136 18	+0 06	+0 06	+0.2	0.0	7.9	10.2	5.3
1749	Miner Island	58 01	136 20	-0 06	-0 01	+0.4	0.0	8.1	10.4	5.5
	Yakobi Island, outer coast									
1751	Takanis Bay	57 55	136 31	-0 02	+0 04	0.0	+0.1	7.6	10.1	5.3
1753	Surge Bay	58 01	136 32	+0 02	+0 07	-0.2	0.0	7.5	9.9	5.1
	Cross Sound									
1755	Cape Bingham	58 05	136 34	+0 02	+0 06	+0.4	0.0	8.1	10.3	5.4
1757	Cape Spencer	58 12	136 40	+0 01	+0 05	+0.5	+0.1	8.1	10.3	5.5
1759	Granite Cove	58 12	136 24	+0 01	+0 04	+1.1	+0.1	8.7	11.0	5.8
1761	Port Althorp	58 12	136 21	-0 01	+0 06	+0.9	0.0	8.6	10.9	5.8
1763	Inian Cove, North Inian Pass	58 16	136 20	+0 11	+0 11	+1.5	0.0	9.2	11.5	6.0
1765	Point Lavinia, South Inian Pass	58 13	136 21	+0 06	+0 10	+1.8	0.0	9.5	11.9	6.1
	Icy Strait									
1767	Idaho Inlet	58 13	136 09	+0 09	+0 13	+1.9	0.0	9.6	12.0	6.2
1769	Lemesurier I. Light, North Passage	58 19	136 02	+0 10	+0 14	+2.6	+0.1	10.2	12.6	6.6
1771	Mud Bay, Goose Island	58 13	136 02	+0 08	+0 11	+2.9	0.0	10.6	12.9	6.7
				on JUNEAU, p.108						
1773	Point Adolphus	58 17	135 47	-0 03	+0 01	-1.8	-0.1	12.0	14.5	7.5
1775	Flynn Cove	58 12	135 35	-0 05	-0 01	-1.4	-0.1	12.4	15.0	7.7
1777	Excursion Inlet	58 30	135 29	+0 02	+0 03	-1.3	0.0	12.4	14.8	7.8
1779	Hoonah Harbor, Port Frederick	58 08	135 28	+0 01	+0 03	-1.4	-0.1	12.4	14.8	7.7
1781	Swanson Harbor	58 13	135 08	+0 04	+0 09	-1.1	0.0	12.6	15.1	7.9

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time High water	Time Low water	Height High water	Height Low water	Mean	Diurnal	
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Icy Strait-Continued Time meridian, 135°W			on JUNEAU, p.108						
	Glacier Bay									
1783	Bartlett Cove	58 27	135 53	+0 11	+0 12	-1.6	0.0	12.1	14.6	7.7
1785	Willoughby Island	58 36	136 07	+0 24	+0 36	-0.2	+0.1	13.4	16.0	8.4
1787	Muir Inlet	58 55	136 07	+0 29	+0 39	+0.3	+0.1	13.9	16.5	8.6
1789	Composite Island	58 53	136 34	+0 28	+0 37	+0.3	+0.1	13.9	16.5	8.6
	Gulf of Alaska			on SITKA, p.112						
1791	Graves Harbor	58 16	136 41	+0 06	+0 12	0.0	+0.1	7.6	10.0	5.3
1793	Dixon Harbor	58 23	136 52	+0 09	+0 12	-0.1	0.0	7.6	9.9	5.2
1795	Lituya Bay, 2 miles inside entrance	58 37	137 37	+0 08	+0 41	-0.3	-0.1	7.5	9.7	5.0
1797	Dry Bay	59 10	138 37	+0 08	+0 12	0.0	0.0	7.7	9.8	5.2
1799	Yakutat, Yakutat Bay	59 33	139 44	+0 16	+0 17	+0.1	-0.1	7.8	10.1	5.3
1801	Icy Bay	59 53	141 28	+0 17	+0 19	-0.1	0.0	7.6	9.9	5.2
1803	Tyndall Glacier, Icy Bay	60 05	141 16	+0 35	+0 33	-0.3	-0.1	7.5	9.7	5.1
1805	Wingham Island, Controller Bay	60 03	144 24	+0 20	+0 24	0.0	0.0	7.7	10.1	5.2
				on CORDOVA, p.116						
	Copper River Delta									
1807	Kokinhenik Island <10>	60 18	145 05	+0 08	- - -	- -	- -	- -	- -	- -
1809	Pete Dahl Slough	60 23	145 24	+0 06	+0 38	-2.4	0.0	7.7	10.0	5.3
1811	Eyak River entrance	60 28	145 40	+0 14	+0 58	-1.6	-0.1	8.6	10.8	5.7
1813	Middleton Island (north end)	59 28	146 19	-0 21	-0 14	-2.2	-0.1	8.0	10.3	5.4
	Prince William Sound									
	Orca Inlet									
1815	Shag Rock	60 28	145 59	-0 11	-0 16	-1.1	-0.1	9.1	11.4	6.0
1817	Gravel Point	60 28	145 58	+0 01	+0 31	-0.1	0.0	10.0	12.3	6.5
1819	CORDOVA	60 34	145 45	Daily predictions				10.1	12.5	6.5
1821	Orca	60 35	145 43	+0 01	+0 01	-0.2	0.0	9.9	12.4	6.4
1823	Windy Bay, Hawkins Island	60 34	145 58	-0 08	-0 01	-0.5	0.0	9.6	12.1	6.3
1825	Comfort Cove, Port Gravina	60 43	146 05	-0 16	-0 06	-0.7	-0.1	9.5	11.8	6.2
	Hinchinbrook Island									
1827	Johnstone Point	60 29	146 37	-0 07	+0 02	-0.8	-0.1	9.4	11.8	6.1
1829	Port Etches	60 20	146 33	-0 09	+0 01	-1.3	-0.2	9.0	11.2	5.8
	Montague Island									
1831	Patton Bay	59 54	147 26	-0 12	-0 05	-2.3	-0.1	7.9	10.2	5.3
1833	Macleod Harbor	59 53	147 46	-0 33	-0 16	-1.4	-0.1	8.8	11.0	5.8
1835	Hanning Bay	59 57	147 41	-0 08	-0 05	-1.0	-0.1	9.2	11.5	6.0
1837	Port Chalmers	60 14	147 14	+0 03	+0 07	-0.8	0.0	9.3	11.7	6.1
1839	Gibbon Anchorage, Green Island	60 16	147 26	-0 21	-0 06	-0.8	-0.2	9.5	11.5	6.1
1841	Latouche, Latouche Island	60 03	147 54	-0 05	-0 02	-1.0	0.0	9.1	11.5	6.0
1843	Sawmill Bay, Evans Island	60 03	148 04	-0 03	+0 03	-1.2	0.0	8.9	11.3	5.9
1845	Snug Harbor, Knight Island	60 14	147 43	-0 06	-0 04	-0.8	-0.1	9.4	11.7	6.1
1847	Port Audrey, Knight Island	60 20	147 46	-0 04	-0 01	-0.4	+0.1	9.6	12.1	6.4
1849	Smith Island	60 32	147 19	-0 05	-0 04	-0.8	-0.1	9.4	11.8	6.1
1851	Snug Corner Cove, Port Fidalgo	60 44	146 39	-0 07	-0 06	-0.6	0.0	9.5	12.0	6.2
1853	Landlocked Bay, Port Fidalgo	60 51	146 32	-0 12	-0 08	-0.7	-0.1	9.5	11.9	6.1
				on VALDEZ, p.120						
	Valdez Arm									
1855	Ellamar, Tatitlek Narrows	60 54	146 42	-0 26	-0 27	-0.1	0.0	9.5	11.9	6.2
1857	Rocky Point	60 57	146 46	-0 02	-0 05	0.0	0.0	9.6	12.1	6.3
1859	Jack Bay	61 02	146 38	-0 03	-0 04	0.0	0.0	9.6	12.1	6.3
1861	VALDEZ, Port Valdez	61 08	146 22	Daily predictions				9.7	12.1	6.3
				on CORDOVA, p.116						
1863	Jackson Cove, Glacier Island	60 53	147 14	-0 10	-0 02	-0.6	0.0	9.5	11.9	6.2
1865	Naked Island, McPherson Passage	60 40	147 24	-0 18	-0 08	-0.7	-0.1	9.5	11.8	6.1
1867	Kings Bay, Port Nellie Juan	60 32	148 28	-0 01	+0 09	-0.6	0.0	9.5	11.9	6.2
1869	Culross Bay, Wells Passage	60 44	148 11	-0 15	-0 01	-0.4	0.0	9.7	12.1	6.3
1871	Long Bay Entrance, Culross Passage	60 42	148 16	+0 03	+0 09	-0.9	-0.1	9.3	11.6	6.1
1873	Whittier, Passage Canal	60 47	148 40	-0 05	+0 01	-0.3	0.0	9.8	12.3	6.4
1875	Applegate Island	60 38	148 10	-0 01	+0 06	-0.6	0.0	9.5	11.9	6.2
1877	Eshamy Bay, Knight Island Passage	60 27	147 59	+0 01	+0 04	-0.4	0.0	9.7	12.1	6.4
1879	Chenega Island, Dangerous Passage	60 20	148 09	-0 01	+0 06	-0.9	0.0	9.2	11.6	6.1
1881	Hogg Bay, Port Bainbridge	60 04	148 12	-0 12	-0 03	-1.9	-0.1	8.3	10.6	5.5
	Kenai Peninsula, outer coast									
1883	Day Harbor	60 01	149 03	-0 11	-0 02	-2.0	-0.1	8.2	10.5	5.5
1885	Seward, Resurrection Bay	60 07	149 26	-0 09	-0 03	-1.9	-0.1	8.3	10.6	5.5
1887	Camp Cove, Aialik Bay	59 42	149 45	-0 12	-0 07	-1.9	-0.2	8.4	10.7	5.5
1889	Two Arm Bay	59 40	150 06	-0 19	-0 07	-1.6	-0.2	8.7	11.0	5.7
1891	Chance Cove (Lagoon)	59 29	150 19	-0 09	-0 01	-1.5	-0.1	8.7	11.0	5.7

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Kenai Peninsula, outer coast-Cont. Time meridian, 135°W			on CORDOVA, p.116						
1893	Beauty Bay, Nuka Bay	59 31	150 38	+0 03	+0 12	-1.1	-0.1	9.1	11.4	5.9
1895	Nuka Passage	59 24	150 40	+0 02	+0 10	-1.0	-0.1	9.2	11.5	6.0
1897	Takoma Cove, Port Dick	59 15	150 59	+0 14	+0 16	-0.4	-0.1	9.8	12.1	6.3
1899	Picnic Harbor, Rocky Bay	59 15	151 26	+0 17	+0 19	+0.3	-0.1	10.5	12.7	6.6
	Cook Inlet			on SELDOVIA, p.124						
1901	Ushagat Island, Barren Islands	58 57	152 16	-0 08	-0 04	*0.76	*0.76	11.4	13.7	7.2
1903	Port Chatham	59 13	151 44	-0 28	-0 34	*0.78	*0.92	11.9	14.3	7.5
1905	Port Graham	59 21	151 49	-0 08	-0 14	-1.0	0.0	14.5	16.9	8.9
1906	Tutka Bay,Kachemak Bay	59 26	151 21	-0 01	-0 01	+0.2	0.0	15.7	18.1	9.5
1907	SELDOVIA, Kachemak Bay	59 27	151 43	Daily predictions				15.5	18.0	9.4
1908	Sadie Cove, Kachemak Bay	59 29	151 22	-0 04	-0 04	+0.1	-0.1	15.6	18.0	9.4
1909	Halibut Cove, Kachemak Bay	59 36	151 13	-0 03	-0 05	+0.7	0.0	16.2	18.7	9.7
1910	Homer, Kachemak Bay	59 38	151 27	-0 10	-0 01	+0.2	-0.1	15.7	18.1	9.5
1911	Bear Cove, Kachemak Bay	59 44	151 01	-0 04	-0 05	+0.4	-0.1	16.0	18.4	9.6
1912	Anchor Point	59 46	151 53	+0 29	+0 21	+0.4	0.0	15.9	18.3	9.6
1913	Cape Ninilchik	60 01	151 43	+0 41	+0 54	+1.2	+0.2	16.5	19.1	10.1
1914	Ninilchik	60 03	151 40	+0 41	+1 04	+1.2	0.0	16.7	19.1	10.0
1915	Kenai River entrance	60 33	151 17	+1 52	+2 18	+2.7	+0.5	17.7	20.7	11.0
1917	Kenai City Pier	60 33	151 14	+1 54	+2 55	+1.9	-0.1	17.5	19.8	10.4
				on NIKISHKA, p.128						
1919	NIKISHKA	60 41	151 24	Daily predictions				17.7	20.5	10.9
				on SELDOVIA, p.124						
1921	East Foreland	60 43	151 25	+2 37	+2 58	+3.0	+0.5	18.0	21.0	11.2
				on ANCHORAGE, p.132						
1923	Fire Island	61 10	150 12	-0 25	-0 28	*0.94	*0.94	24.4	27.0	14.2
1925	Sunrise, Turnagain Arm <11>	60 54	149 26	+0 32	+1 12	+4.2	-0.2	30.3	33.3	17.1
1927	ANCHORAGE, Knik Arm	61 14	149 53	Daily predictions				25.9	28.8	15.2
1929	Eklutna, Knik Arm <12>	61 28	149 22	+1 11	- - -	- -	- - -	- -	- -	- -
				on SELDOVIA, p.124						
1931	North Foreland	61 03	151 10	+3 47	+4 06	(*1.18+0.2)		18.3	21.0	11.3
1933	Drift River Terminal	60 34	152 08	+1 39	+2 04	*1.01	*1.18	15.4	18.1	9.7
1935	Tuxedni Channel	60 09	152 38	+0 39	+0 53	-1.3	+0.2	14.0	16.6	8.9
1937	Snug Harbor	60 06	152 34	+1 04	+1 15	-2.3	0.0	13.2	15.7	8.3
1939	Iliamna Bay	59 37	153 35	+0 12	+0 16	*0.80	*0.82	12.3	14.5	7.5
1941	Nordyke Island, Kamishak Bay	59 11	154 05	+0 10	+0 22	-2.8	-0.2	12.9	15.2	8.0
	Kodiak and Afognak Islands			on KODIAK, p.136						
1943	Andreon Bay, Shuyak Island	58 31	152 25	+0 39	+0 48	+2.8	+0.4	9.0	11.3	5.9
1945	Perenosa Bay	58 21	152 27	+0 32	+0 42	+2.8	+0.4	9.0	11.3	5.9
1947	Seal Bay	58 22	152 15	+0 33	+0 39	+2.7	+0.4	8.9	11.2	5.8
1949	Tonki Bay	58 19	152 04	+0 16	+0 24	+2.6	+0.3	8.9	11.2	5.8
1951	Marmot Island, Marmot Strait	58 14	151 52	+0 22	+0 10	+1.2	+0.1	7.7	9.8	4.9
1953	Izhut Bay	58 13	152 19	+0 16	+0 24	+0.4	+0.1	6.9	8.9	4.5
1955	Kazakof Bay, Marmot Bay	58 08	152 34	+0 08	+0 09	+0.9	+0.3	7.2	9.4	4.9
1957	Fox Bay, Whale Island	57 59	152 45	+0 27	+0 40	+1.5	+0.3	7.8	10.0	5.2
1959	Kizhuyak Bay	57 49	152 54	+0 10	+0 14	+1.1	+0.1	7.6	9.6	4.9
1961	Kizhuyak Point	57 54	152 39	+0 09	+0 12	+0.9	+0.2	7.3	9.4	4.8
1963	Ouzinkie, Spruce Island	57 55	152 30	-0 01	-0 01	+0.5	+0.1	7.0	9.1	4.6
1965	Spruce Island (north side)	57 56	152 26	+0 06	+0 11	+0.7	+0.2	7.1	9.2	4.7
1967	KODIAK, Kodiak Harbor	57 47	152 24	Daily predictions				6.6	8.5	4.3
1969	St. Paul Harbor	57 44	152 29	-0 07	-0 03	+0.2	+0.1	6.7	8.7	4.4
1971	Womens Bay	57 43	152 31	+0 04	+0 01	+0.3	+0.1	6.8	8.8	4.5
1973	Ugak Bay (Saltery Cove)	57 29	152 44	-0 25	-0 17	0.0	0.0	6.6	8.4	4.3
1975	Port Hobron, Sitkalidak Island	57 10	153 09	-0 14	-0 03	0.0	+0.2	6.4	8.3	4.4
1977	Three Saints Bay	57 07	153 31	-0 18	-0 10	+0.1	+0.2	6.5	8.3	4.4
1979	Jap Bay	56 58	153 42	-0 13	-0 06	0.0	+0.2	6.4	8.2	4.4
1981	Sitkinak Lagoon	56 30	154 08	-0 16	+0 10	-0.7	+0.3	5.6	7.5	4.1
1983	Lazy Bay, Alitak Bay	56 54	154 15	+0 02	+0 18	*1.41	*1.41	9.3	11.7	6.2
1985	Moser Bay (Trap Point)	57 00	154 09	+0 13	+0 32	*1.39	*1.39	9.3	11.6	6.2
1987	Olga Bay (A. P. A. Cannery)	57 10	154 14	+3 48	+4 16	*0.14	*0.14	1.0	1.4	0.6
				on SELDOVIA, p.124						
	Uyak Bay									
1989	Uyak	57 38	154 00	-0 16	-0 01	*0.77	*0.77	11.3	13.8	7.3
1991	Larsen Bay	57 32	154 00	-0 14	-0 01	-4.4	-0.1	11.2	13.7	7.2
1993	Mining Camp	57 28	153 49	-0 37	-0 10	-4.1	-0.1	11.5	13.9	7.3
1995	Zachar Bay	57 33	153 44	-0 09	0 00	*0.77	*0.77	11.3	13.8	7.3
	Uganik Bay									
1997	Village Islands	57 47	153 33	-0 15	-0 02	*0.80	*0.80	11.7	14.4	7.5
1999	Northeast Arm	57 44	153 20	-0 12	-0 01	*0.77	*0.77	11.4	13.9	7.3
2001	Uganik Passage	57 48	153 18	-0 07	+0 02	*0.81	*0.81	11.9	14.6	7.6
2003	Viekoda Bay	57 54	153 10	-0 11	-0 03	*0.80	*0.80	11.8	14.4	7.6

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION Lat.	POSITION Long.	DIFFERENCES Time High water	DIFFERENCES Time Low water	DIFFERENCES Height High water	DIFFERENCES Height Low water	RANGES Mean	RANGES Diurnal	Mean Tide Level
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Kodiak and Afognak Islands-Cont. Time meridian, 135°W			on SELDOVIA, p.124						
	Kupreanof Strait									
2005	Onion Bay	58 03	153 14	0 00	-0 01	*0.80	*0.80	11.8	14.4	7.6
2007	Dry Spruce Island	57 57	153 02	+0 02	+0 13	*0.77	*0.77	11.4	13.9	7.4
2009	Nachaini Island	57 59	152 56	+0 10	+0 24	*0.76	*0.76	11.2	13.6	7.2
2011	Uzkosti Point	57 56	152 49	-0 43	+0 34	*0.64	*0.64	8.8	11.6	6.2
2013	Dolphin Point, Raspberry Strait	58 07	153 09	-0 25	-0 05	-4.1	-0.1	11.5	14.0	7.3
2015	Malina Bay, Shelikof Strait	58 11	152 57	-0 14	0 00	*0.81	*0.81	12.0	14.5	7.7
2017	Redfox Bay, Shuyak Strait	58 27	152 36	-0 14	-0 02	-4.4	-0.2	11.3	13.7	7.2
	Shuyak Island									
2019	Big Bay	58 33	152 37	+0 10	+0 15	*0.77	*0.77	11.5	13.9	7.3
2021	Carry Inlet	58 35	152 31	+0 06	+0 07	*0.73	*0.73	10.7	13.1	6.9
	Alaska Peninsula									
2023	Kukak, Kukak Bay	58 20	154 07	-0 08	+0 05	*0.74	*0.74	11.1	13.3	6.9
2025	Katmai Bay, Shelikof Strait	58 00	154 59	-0 14	+0 01	*0.71	*0.71	10.5	12.8	6.6
2027	Puale Bay	57 42	155 23	-0 22	-0 03	*0.67	*0.67	9.8	12.1	6.4
				on KODIAK, p.136						
2029	Kanatak Lagoon, Portage Bay	57 31	156 04	+0 25	+0 54	+3.3	+0.4	9.5	11.8	6.1
2031	Lees Cabins, Wide Bay	57 26	156 18	+0 25	+0 35	+3.5	+0.3	9.8	11.9	6.2
2033	Anchorage Bay	56 18	158 24	+0 23	+0 43	+0.5	+0.4	6.7	8.9	4.7
2035	Three Star Point	55 54	159 10	+0 32	+0 40	*0.93	*0.93	5.7	7.9	4.2
2037	Chiachi Island (east side)	55 51	159 06	+0 26	+0 40	*0.92	*0.92	5.6	7.8	4.2
2039	Kupreanof Harbor, Paul Island	55 47	159 21	+0 23	+0 38	*0.92	*0.92	5.6	7.8	4.2
2041	Fox Bay, Kupreanof Peninsula	55 38	159 37	+0 22	+0 36	*0.89	*0.89	5.5	7.6	4.0
2043	Dent Point, Stepovak Bay	55 47	159 53	+0 21	+0 36	*0.89	*0.89	5.5	7.6	4.0
	Shumagin Islands									
2045	Korovin Island (east side)	55 24	160 09	+0 26	+0 52	*0.92	*0.92	5.6	7.8	4.2
2047	Sanborn Harbor, Nagai Island	55 09	159 59	+0 37	+0 37	*0.86	*0.86	5.2	7.2	3.9
2049	Mist Harbor, Nagai Island	55 08	159 51	+0 35	+0 38	*0.83	*0.83	5.1	7.0	3.7
2051	Pirate Cove, Popof Island	55 22	160 22	+0 42	+0 43	*0.88	*0.88	5.4	7.4	4.0
2053	Sand Point, Popof Island	55 20	160 30	+0 30	+0 42	*0.87	*0.87	5.2	7.3	4.0
2055	Zachary Bay, Unga Island	55 20	160 37	+0 34	+0 49	*0.88	*0.88	5.4	7.5	4.0
2057	Albatross Anchorage, Balboa Bay	55 35	160 37	+0 32	+0 43	*0.91	*0.91	5.5	7.6	4.1
2059	Beaver Bay	55 28	160 50	+0 37	+0 42	*0.87	*0.87	5.2	7.3	4.0
2061	Seal Cape, Coal Bay	55 22	161 20	+0 34	+0 45	*0.84	*0.84	5.0	7.0	3.9
2063	Ukolnoi Island	55 16	161 32	+0 41	+0 40	*0.83	*0.83	5.0	7.0	3.8
2065	Dolgoi Harbor, Dolgoi Island	55 07	161 48	+0 44	+0 40	*0.79	*0.79	4.7	6.7	3.6
2067	Settlement Point, Pavlof Bay	55 30	161 28	+0 43	+0 48	*0.84	*0.84	5.2	7.2	3.8
2069	Canoe Bay, Pavlof Bay	55 35	161 16	+1 36	+1 30	*0.76	*0.76	4.6	6.5	3.5
2071	King Cove	55 04	162 19	+0 40	+0 42	*0.80	*0.80	4.8	6.8	3.7
2073	Lenard Harbor, Cold Bay	55 07	162 23	+0 46	+0 57	*0.85	*0.85	5.1	7.2	3.8
2075	Cold Bay	55 12	162 42	+0 49	+1 03	*0.84	*0.84	5.2	7.1	3.8
2077	Morzhovoi Bay	55 01	162 58	+0 50	+0 43	*0.80	*0.80	4.7	6.8	3.6
	Sanak Islands									
2079	Peterson Bay	54 24	162 38	+0 29	+0 32	*0.73	*0.73	4.0	6.2	3.4
2081	Sanak Harbor	54 29	162 49	+0 48	+0 43	*0.78	*0.78	4.4	6.6	3.6
	Aleutian Islands									
	Unimak Island									
2083	Dora Harbor	54 42	163 16	+0 49	+0 55	*0.77	*0.77	4.3	6.5	3.5
2085	Ikatan Bay	54 45	163 19	+0 43	+0 45	*0.78	*0.78	4.6	6.5	3.6
				on DUTCH HARBOR, p.140						
2087	False Pass, Isanotski Strait	54 52	163 24	-1 47	-2 18	+0.1	+0.1	2.1	4.1	2.4
2089	St. Catherine Cove	55 01	163 30	+0 04	-0 11	+0.8	+0.4	2.6	4.7	2.9
2091	Cape Mordvinof	54 56	164 28	+0 26	+0 26	+2.5	+0.4	4.3	6.4	3.7
2093	Cape Sarichef	54 36	164 55	-0 24	-0 49	+1.3	+0.3	3.2	5.0	3.1
2095	Scotch Cap	54 24	164 44	-2 27	-2 42	+1.4	+0.3	3.3	5.4	3.1
2097	Tigalda Bay, Tigalda Island	54 07	164 59	-1 53	-1 57	*0.82	*0.82	1.8	3.3	1.9
2099	Trident Bay, Akun Island	54 08	165 32	-3 59	-4 04	0.0	-0.3	2.5	4.1	2.1
2101	Akun Bay, Akun Island	54 14	165 32	-0 02	-0 27	*0.80	*0.80	1.6	3.0	1.9
2103	Akutan Harbor, Akutan Island	54 08	165 48	-0 17	0 00	+0.3	+0.1	2.4	3.9	2.5
2105	Malga Bay, Unalga Island	53 59	166 10	-0 18	-0 58	*0.85	*0.85	1.8	3.3	2.0
	Unalaska Island									
2107	English Bay	53 56	166 15	+0 16	+0 06	*0.81	*0.81	1.8	3.0	1.8
2109	DUTCH HARBOR, Amaknak Island	53 54	166 32	Daily predictions				2.2	3.7	2.3
2111	Unalaska	53 53	166 32	+0 01	+0 03	0.0	0.0	2.2	3.7	2.3
2113	Anderson Bay	53 41	166 50	-0 01	+0 35	+0.3	+0.1	2.4	4.0	2.5
2115	Skan Bay	53 37	167 03	-0 07	-0 12	+0.2	+0.1	2.3	4.0	2.4
2117	Kashega Bay	53 28	167 05	-0 08	-0 17	+0.3	+0.2	2.3	4.0	2.5
2119	Chernofski Harbor	53 24	167 32	-0 10	-0 22	+0.1	+0.1	2.2	3.8	2.4
2121	Kulillak Bay	53 28	167 01	-3 10	-3 28	+1.6	+0.3	3.5	5.6	3.2

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ' N	° ' W	h. m.	h. m.	ft	ft	ft	ft	ft
	Aleutian Islands-Continued Time meridian, 135°W			on DUTCH HARBOR, p.140						
	Unalaska Island-Cont.									
2123	Eagle Bay	53 29	166 56	-2 56	-3 09	+1.6	0.0	3.8	5.4	3.1
2125	Raven Bay	53 28	166 52	-3 16	-3 41	+1.7	+0.3	3.6	5.7	3.3
2127	Usof Bay	53 31	166 48	-3 30	-3 38	+1.9	+0.2	3.9	6.1	3.3
2129	Udamat Bay, Sedanka Island	53 50	166 13	-3 13	-3 18	+1.2	+0.1	3.3	5.1	2.9
2131	Udagak Strait	53 44	166 18	-3 32	-3 52	+1.3	0.0	3.5	5.5	2.9
2133	Kisselen Bay, Beaver Inlet	53 43	166 34	-2 59	-3 07	+1.4	+0.1	3.5	5.2	3.0
2135	Bogoslof Island	53 55	168 02	-0 30	-0 48	+0.3	+0.1	2.4	3.9	2.5
	Umnak Island									
2137	Otter Point	53 24	167 51	-0 27	-0 33	*0.92	*0.92	1.9	3.4	2.0
2139	Inanudak Bay	53 18	168 21	-0 06	-0 23	-0.1	-0.1	2.2	3.7	2.2
2141	Okee Bay	53 01	168 50	-0 07	-0 36	0.0	0.0	2.1	3.7	2.3
2143	Adugak Islands	52 55	169 10	-0 33	-0 49	+0.1	+0.1	2.2	4.0	2.4
2145	Cape Sagak	52 50	169 03	-3 03	-3 09	+0.7	0.0	2.9	4.9	2.6
2147	Driftwood Bay	52 57	168 43	-2 56	-3 17	+1.2	+0.1	3.3	5.3	2.9
2149	Kigul Island	53 03	168 26	-3 04	-3 35	+1.3	+0.3	3.2	5.5	3.1
	Time meridian, 150°W									
2151	Applegate Cove, Chuginadak Island	52 52	169 52	-1 21	-1 51	+0.3	+0.3	2.2	4.2	2.6
2153	Herbert Island, west side	52 43	170 09	-2 40	-2 44	+0.5	-0.1	2.8	4.4	2.5
	Yunaska Island									
2155	East Cove	52 40	170 34	-2 36	-3 28	*0.88	*0.83	2.0	3.7	2.0
2157	North side	52 41	170 42	-2 05	-2 22	+0.1	+0.1	2.1	4.0	2.4
2159	Amukta Island, north side	52 31	171 14	-2 32	-2 56	*0.94	*0.94	1.9	3.6	2.2
				on SWEEPER COVE, p.144						
2161	Finch Cove, Seguam Island †	52 23	172 24	-1 00	+0 07	*0.87	*0.87	- -	3.2	1.6
	Atka Island									
2163	Martin Harbor, Korovin Bay †	52 14	174 18	+0 19	+0 21	*0.87	*0.87	- -	3.2	1.6
2165	Nazan Bay †	52 12	174 11	+0 21	+0 22	*0.89	*0.89	- -	3.3	1.6
2167	Cape Utalug (4 miles west of) †	52 07	174 12	-1 38	-2 32	*1.19	*1.19	- -	4.4	2.2
2169	Atka Pass, east end †	52 00	175 19	-1 07	-2 10	*1.24	*1.24	- -	4.6	2.3
2171	Sagchudak Island †	52 02	174 29	-1 26	-2 25	*1.24	*1.24	- -	4.6	2.3
2173	Explorer Bay †	52 04	174 34	-2 43	-2 24	*1.24	*1.24	- -	4.6	2.3
2175	Bechevin Bay †	52 02	175 07	+0 11	+0 04	*0.95	*0.95	- -	3.5	1.7
2177	Fenimore Pass †	51 58	175 35	-0 04	-0 13	*0.89	*0.89	- -	3.3	1.6
2179	Bugle Point, Great Sitkin Island †	52 02	175 59	+0 01	-0 05	*0.89	*0.89	- -	3.3	1.6
2181	Sand Bay, Great Sitkin Island †	51 58	176 05	-0 05	-0 20	*0.97	*0.97	- -	3.6	1.8
2183	Tanager Point, Chugul Island †	51 57	175 52	- - -	-2 08	*1.00	*1.00	- -	3.7	1.9
2185	Chisak Bay, Little Tanaga Island †	51 48	176 08	- - -	-2 06	*0.89	*0.89	- -	3.3	1.7
2187	Cemetery Point, Kagalaska Island †	51 49	176 16	-0 45	-0 29	*0.92	*0.92	- -	3.4	1.7
2189	Laska Cove, Kagalaska Island †	51 50	176 24	-0 04	+0 07	*0.97	*0.97	- -	3.6	1.8
	Adak Island									
2191	Clam Lagoon, Kuluk Bay †	51 56	176 36	+1 14	+2 12	*0.78	*0.78	- -	2.9	1.4
2193	SWEEPER COVE, Kuluk Bay †	51 51	176 39	Daily predictions				- -	3.7	1.8
2195	Finger Bay, Kuluk Bay †	51 50	176 37	0 00	0 00	*1.00	*1.00	- -	3.7	1.8
2197	Adak Bight †	51 46	176 26	-1 24	-2 02	*1.00	*1.00	- -	3.7	1.8
2199	Boot Bay †	51 43	176 32	-1 38	-2 09	*0.97	*0.97	- -	3.6	1.8
2201	Bay of Waterfalls †	51 39	176 50	-1 20	-2 04	*0.95	*0.95	- -	3.5	1.7
2203	Three Arm Bay †	51 45	176 51	-1 28	-1 37	*1.00	*1.00	- -	3.7	1.8
2205	Unalga Bight †	51 47	176 48	-0 07	-0 21	*0.97	*0.97	- -	3.6	1.8
2207	Andrew Bay †	51 59	176 38	+0 13	-0 12	*0.97	*0.97	- -	3.6	1.8
	Kanaga Island									
2209	Shoal Point	51 52	177 04	+0 01	-0 16	*0.86	*0.86	- -	3.2	1.6
2211	Cape Chlanak	51 43	177 09	-1 22	-1 34	*0.92	*0.92	- -	3.4	1.7
2213	Kanaga Bay †	51 43	177 12	-1 39	-1 44	*1.05	*1.05	- -	3.9	1.9
2215	Cape Chunu †	51 40	177 38	-1 44	-1 54	*1.11	*1.11	- -	4.1	2.0
	Tanaga Island									
2217	Gusty Bay †	51 52	177 54	+0 25	0 00	*0.89	*0.89	- -	3.3	1.6
2219	Hot Springs Bay †	51 47	177 48	-0 40	-0 12	*0.84	*0.84	- -	3.1	1.5
2221	Tanaga Bay †	51 43	178 00	-0 06	-0 32	*1.08	*1.08	- -	4.0	2.0
2223	Lash Bay †	51 40	178 03	-0 56	-1 39	*1.14	*1.14	- -	4.2	2.1
	Delarof Islands									
2225	Ogliuga Island (east coast) †	51 36	178 37	+0 01	-0 43	*0.95	*0.95	- -	3.5	1.7
2227	Gareloi Island †	51 45	178 48	-0 08	-0 30	*1.00	*1.00	- -	3.7	1.8
2229	Ulak Island †	51 22	178 59	-0 56	-1 19	*1.03	*1.03	- -	3.8	1.9
	Rat Islands									
2231	South Bight, Amchitka Island †	51 23	180 37	+0 06	-0 40	*0.95	*0.95	- -	3.5	1.7
2233	Constantine Harbor, Amchitka I †	51 25	180 43	+0 19	-0 06	*0.76	*0.76	- -	2.8	1.4
2235	Gertrude Cove, Kiska Island †	51 56	182 33	+0 02	-0 19	*0.86	*0.86	- -	3.2	1.6
2237	Kiska Harbor, Kiska Island †	51 59	182 27	+0 24	-0 13	*0.97	*0.97	- -	3.6	1.8
				on MASSACRE BAY, p.148						
2239	Alcan Harbor, Shemya Island †	52 44	185 56	0 00	-0 03	*1.03	*1.03	- -	3.4	1.7
2241	Otkriti Bay, Agattu Island †	52 23	186 22	-0 14	-0 13	*1.03	*1.03	- -	3.4	1.7
	Attu Island									
2243	MASSACRE BAY †	52 50	186 48	Daily predictions				- -	3.3	1.6
2245	Chichagof Harbor †	52 56	186 46	+0 13	+0 16	*1.09	*1.09	- -	3.6	1.8
2247	Holtz Bay †	52 56	186 50	-0 04	+0 18	*1.12	*1.12	- -	3.7	1.8
2249	Steller Cove †	52 59	187 06	-0 13	+0 11	*1.12	*1.12	- -	3.7	1.8
2251	Etienne Bay †	52 56	187 23	-0 17	+0 03	*1.12	*1.12	- -	3.7	1.8

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time		Height		Mean	Diurnal	
				High water	Low water	High water	Low water			
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Bristol Bay Time meridian, 135°W			on DUTCH HARBOR, p.140						
2253	Amak Island	55 25	163 07	+1 39	+1 55	+3.9	+0.9	5.2	7.7	4.7
2255	Grant Point, Izembek Lagoon	55 16	162 54	+3 03	+4 12	+0.8	-0.2	3.2	4.5	2.6
				on NUSHAGAK BAY, p.152						
2257	Port Moller (Entrance Point)	55 59	160 34	-4 33	-4 59	*0.56	*0.96	7.6	10.8	6.2
2259	Port Heiden	56 56	158 44	-3 03	-2 55	*0.62	*1.04	8.5	12.3	6.9
	Egegik River									
2261	Entrance	58 14	157 30	-1 30	-1 13	*0.92	*0.92	13.8	18.2	9.4
2263	Egegik	58 13	157 22	-1 04	+0 36	*0.65	*0.32	10.8	13.3	6.2
2265	Middle Bluff, Kvichak Bay	58 27	157 30	-0 50	-0 50	0.0	0.0	15.2	19.6	10.1
	Naknek River									
2267	Entrance <13>	58 43	157 03	-0 19	+0 26	+2.9	-0.3	18.5	22.6	11.4
2269	Morakas Point	58 44	156 56	-0 11	+1 37	*0.90	*0.36	15.1	17.8	8.4
2271	Omakstalia Point	58 42	156 45	+0 12	+3 35	*0.37	*0.12	6.3	8.1	3.4
2273	Naknek Air Base	58 40	156 39	+0 57	+4 46	*0.13	*0.08	2.1	3.2	1.2
	Kvichak River									
2275	Nakeen	58 56	157 02	+0 04	+2 01	*0.90	*0.28	15.4	17.9	8.4
2277	Kvichak	58 58	156 57	+0 35	+2 49	*0.83	*0.36	13.9	16.5	7.8
2279	Levelock	59 07	156 50	+1 27	+4 34	*0.49	*0.20	8.2	10.3	4.6
	Nushagak Bay									
2281	Protection Point	58 30	158 42	-0 12	-0 22	-2.6	0.0	12.7	16.9	8.8
2283	NUSHAGAK BAY (Clarks Point)	58 51	158 33	Daily predictions				15.3	19.5	10.1
2285	Snag Point	59 02	158 27	+0 49	+1 07	+0.2	-0.4	15.9	19.8	10.0
2287	Black Rock, Walrus Islands <15>	58 42	160 11	+0 07	-0 07	-10.1	*0.70	5.9	9.5	4.7
	Kuskokwim Bay and River			on MATARANI, p.24						
2289	Goodnews Bay entrance	59 03	161 49	+0 59	+0 51	*2.83	*2.00	6.2	8.9	3.7
2291	Carter Spit	59 19	161 57	+1 19	+1 24	*3.63	*2.33	8.0	10.7	4.7
2293	Eek Channel, off Quinhagak	59 45	162 15	+2 39	+3 05	*4.25	*1.67	9.7	12.3	5.3
2295	Warehouse Creek entrance	59 56	162 05	+3 05	+3 50	*4.38	*1.67	10.0	12.6	5.5
2297	Kuskokwak Creek entrance	60 02	162 10	+3 53	+4 40	*4.21	*1.67	9.6	12.2	5.3
2299	Popokamute	60 04	162 25	+4 12	+5 05	*3.67	*1.67	8.3	10.9	4.6
2301	Apokak Creek entrance	60 08	162 10	+4 13	+5 10	*4.13	*1.67	9.4	12.0	5.2
2303	Bethel	60 48	161 45	+8 51	+11 11	+0.3	+0.1	2.3	4.0	1.5
	Bering Sea			on DUTCH HARBOR, p.140						
2305	Village Cove, St. Paul Island	57 07	170 16	+0 18	+0 20	*0.86	*0.86	2.0	3.2	2.0
2307	St. Matthew Island	60 22	172 43	+0 22	+0 57	*0.57	*0.57	1.3	2.1	1.2
	St. Lawrence Island			on NUSHAGAK BAY, p.152						
2309	Northeast Cape	63 17	168 44	-1 57	-2 22	*0.12	*0.08	1.9	2.4	1.1
2311	Fossil River entrance	63 28	170 02	-2 06	-2 34	*0 08	*0 08	1.3	1.7	0.8
2313	Niyrakpak Lagoon entrance	63 37	171 23	-2 33	-2 57	*0.06	*0.06	0.9	1.2	0.6
				on KODIAK, p. 136						
2315	Moghoweyik River entrance	63 28	171 50	+8 16	+9 21	*0.20	*0.20	1.3	1.7	0.8
2317	Powooiliak Point	63 21	171 16	+5 55	+6 05	*0.28	*0.28	1.8	2.4	1.2
2319	Maknik Lagoon entrance	63 07	169 25	+1 31	+1 50	*0.22	*0.20	1.5	1.9	0.9
2321	Tachikuga Bay, Nunivak Island	60 04	167 14	-5 00	-4 33	*0.51	*0.51	3.1	4.3	2.3
2323	Kokechik Bay	61 42	166 00	+0 01	+0 28	*0.77	*0.77	4.8	6.5	3.4
2325	Cape Romanzof	61 49	166 05	+0 24	+0 03	*0.80	*0.80	5.2	6.8	3.3
2327	Black, Black River	62 20	165 19	+1 35	+1 53	*0.59	*0.59	3.8	5.0	2.5
	Norton Sound									
2329	Kwikluak Pass, Yukon River	62 37	164 51	+3 47	+5 34	*0.20	*0.10	1.4	2.3	0.8
2331	Kawanak Pass entrance, Yukon River	63 02	164 28	+4 26	+5 23	*0.22	*0.20	1.5	2.7	0.9
				on ST. MICHAEL, p.156						
2333	Apoon Mouth, Yukon River †	63 03	163 23	-1 20	-1 20	+0.1	0.0	- -	4.0	2.0
2335	Pikmiktalik River entrance †	63 16	162 36	-1 02	-1 02	+0.3	0.0	- -	4.2	2.1
2337	ST. MICHAEL †	63 29	162 02	Daily predictions				- -	3.9	2.0
2339	North Bay, Stuart Island †	63 37	162 30	-0 22	-0 22	*0.72	*0.72	- -	2.8	1.4
2341	Carolyn Island, Golovnin Bay †	64 27	162 52	+1 19	+1 19	*0.46	*0.46	- -	1.8	0.9
				on DUTCH HARBOR, p.140						
2343	Nome	64 30	165 24	+11 07	+11 26	*0.41	*0.33	1.0	1.6	0.9
2345	Port Clarence	65 13	166 28	- - -	- - -	- -	- -	1.2	1.4	0.7
	Arctic Ocean <15>			on KODIAK, p.136						
2347	Kiwalik, Kotzebue Sound	66 08	161 52	+6 20	+6 10	*0.32	*0.30	2.1	2.7	1.3

Endnotes can be found at the end of table 2.

NO.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Lat.	Long.	Time High water	Time Low water	Height High water	Height Low water	Mean	Diurnal	
		° ′ N	° ′ W	h. m.	h. m.	ft	ft	ft	ft	ft
	Arctic Ocean <15>-Continued Time meridian, 135°W			on KODIAK, p.136						
2349	Point Barrow	71 22	156 22	-0 33	-0 23	*0.05	*0.05	0.3	0.4	0.2
2351	Flaxman Island	70 11	145 50	-0 53	-0 25	*0.08	*0.08	0.5	0.7	0.3
2353	Herschel Island, Mackenzie Bay	69 34	138 55	-1 32	-1 39	- -	- -	0.6	0.7	1.5
2355	Tuktoyaktuk, Mackenzie Bay	69 27	133 00	-1 26	-0 51	- -	- -	1.1	1.2	1.3
	HAWAIIAN ISLANDS Time meridian, 165°W			on HONOLULU, p.160						
2357	Midway Islands	28 13	177 22	+0 12	+0 09	*0.67	*0.67	0.8	1.2	0.6
2359	Lisianski Island	26 04	173 58	- - -	- - -	- -	- -	0.5	0.8	0.3
	Time meridian, 150°W									
2361	Laysan Island	25 46	171 45	+1 02	+1 12	*0.53	*0.50	0.7	1.0	0.4
2363	East Island, French Frigate Shoals	23 47	166 13	+0 03	+0 08	*0.73	*0.73	0.9	1.4	0.6
2365	Nonopapa, Niihau Island	21 52	160 14	-0 16	-0 11	*0.77	*0.77	1.0	1.6	0.7
	Kauai Island									
2367	Waimea Bay	21 57	159 40	-0 20	-0 07	*0.77	*0.77	1.0	1.6	0.7
2369	Port Allen, Hanapepe Bay	21 54	159 35	-0 36	-0 22	*0.85	*0.85	1.1	1.7	0.7
2371	Nawiliwili Bay	21 58	159 21	-0 27	-0 25	-0.1	0.0	1.2	1.9	0.8
2373	Hanamaulu Bay	22 00	159 20	-0 17	-0 21	-0.1	0.0	1.2	1.8	0.8
2375	Hanalei Bay	22 13	159 30	-1 28	-1 47	0.0	0.0	1.3	1.8	0.8
	Oahu Island									
2377	Haleiwa, Waialua Bay †	21 36	158 07	-1 02	-2 05	*0.80	*0.80	- -	1.6	0.7
2379	Waianae	21 27	158 12	+0 20	+0 18	-0.1	0.0	1.2	1.8	0.8
2381	HONOLULU	21 18	157 52	Daily predictions				1.3	2.0	0.8
2383	Hanauma Bay	21 17	157 42	-0 59	-0 45	0.0	0.0	1.3	1.9	0.8
2385	Waimanalo	21 20	157 42	-1 15	-1 09	*0.85	*0.85	1.1	1.8	0.8
2387	Moku o Loe	21 26	157 48	-1 24	-1 14	+0.1	+0.2	1.2	2.0	1.0
2389	Waikane, Kaneohe Bay	21 30	157 51	-1 46	-1 18	+0.3	+0.2	1.4	2.2	1.1
2391	Laie Bay	21 39	157 56	-1 45	-1 46	+0.1	+0.1	1.3	2.2	0.9
	Molokai Island									
2393	Kolo	21 06	157 12	+0 05	+0 01	0.0	0.0	1.3	2.0	0.8
2395	Kaunakakai	21 05	157 02	-0 05	-0 08	+0.1	0.0	1.4	2.1	0.9
2397	Kamalo Harbor	21 03	156 53	-0 37	-0 16	+0.1	0.0	1.4	2.1	0.9
2399	Pukoo Harbor	21 04	156 48	-1 03	-0 48	+0.1	0.0	1.4	2.1	0.9
2401	Kaumalapau, Lanai Island	20 47	157 00	+0 02	+0 03	+0.2	0.0	1.5	2.2	0.9
	Maui Island									
2403	Kahului	20 54	156 28	-1 53	-1 41	+0.4	+0.2	1.5	2.3	1.1
2405	Hana	20 46	155 59	-1 13	-1 23	+0.5	0.0	1.8	2.5	1.1
2407	Makena	20 39	156 27	-0 32	-0 32	-0.1	0.0	1.2	1.8	0.8
2409	Kihei, Maalaea Bay	20 47	156 28	-0 01	-0 22	+0.3	0.0	1.6	2.3	1.0
2411	Lahaina	20 53	156 41	-0 35	-0 40	+0.2	+0.1	1.4	2.2	1.0
	Kahoolawe Island									
2413	Kuheia Bay	20 36	156 36	-0 09	-0 09	+0.2	0.0	1.5	2.1	0.9
2415	Smuggler Cove	20 31	156 41	-0 15	+0 03	+0.2	0.0	1.5	2.2	0.9
	Hawaii Island									
2417	Mahukona	20 11	155 54	-0 26	-0 17	+0.1	0.0	1.4	2.1	0.9
2419	Kawaihae	20 02	155 50	-0 04	-0 03	0.0	0.0	1.3	2.0	0.8
2421	Kailua Kona	19 39	156 00	-0 26	-0 22	+0.1	0.0	1.4	2.1	0.9
2423	Napoopoo, Kealakekua Bay	19 28	155 55	-0 16	-0 12	+0.1	0.0	1.4	2.1	0.9
2425	Honuapo	19 05	155 33	-0 26	-0 16	+0.5	+0.1	1.7	2.5	1.1
2427	Hilo	19 44	155 04	-1 04	-0 59	+0.5	+0.1	1.7	2.4	1.1
2429	Johnston Island	16 45	169 31	+1 26	+1 16	+0.5	0.0	1.9	2.2	1.1

Endnotes can be found at the end of table 2.

ENDNOTES

* Ratio. If the ratio is accompanied by a correction factor multiply the heights of the high and low waters at the reference station by the ratio and then apply the correction factor. See note and examples on pages 165 and 166.

† The tide at this place is chiefly diurnal. See caution note on page 165.

< 1> For places on the Atlantic coast, see "Tide Tables, East Coast of North and South America."

< 2> For places on the Caribbean Sea and Gulf of Mexico, see "Tide Tables, East Coast of North and South America."

< 3> The bore in the Colorado River above Phillips Point is reported to have a height of several feet at times of large tides.

< 4> These data apply only during low river stages.

< 5> The Columbia River is subject to annual freshets. Short range predictions are available at local river forecast centers. The data for stations above Harrington Point apply only during low river stages.

< 6> For stations on the Canadian side see pages 175 and 176.

< 7> The low water seldom falls below the chart datum.

< 8> The data for La Conner apply only during low levels of the channel which usually occur in midsummer. Low water seldom falls below the chart datum.

< 9> Heights are referred to mean lower low water, the datum of soundings on National Ocean Service charts.

<10> Because of shoals, low water at this place is restricted from falling below half tide level outside the river entrance.

<11> A bore frequently occurs in Turnagain Arm just after low water. Under favorable conditions it is said to reach a height of 6 feet.

<12> Because of the shoal condition of the upper part of Knik Arm, the channel off Eklutna becomes practically a nontidal stream during the period when the height of the tide at Anchorage is less than 15 feet above mean lower low water.

<13> No low water falls below -2 feet.

<14> When the difference in height between lower high water and higher low water at Nushagak Bay is less than 8 feet, reliance should not be placed on calculated corresponding tides at Black Rock because the tide there may actually be diurnal.

<15> Along the Arctic coast of Alaska east of Cape Lisburne the mean range is about 0.5 foot.

<16> For the passages inside Vancouver Island the height differences apply only to the higher high and lower low waters at the indicated reference station.

<17> The slough in this area goes dry at low water stages of the tide. The mean high water depth is about 5 feet.

<18> Due to bottom configuration and depths at low water stages, a low water stand may occur at this station.

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TABLE 3.—HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of table 3 may be sufficient explanation, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0735 at Balboa, Panama, on a day when the predicted tides from table 1 are given as:

Low Water		High Water	
Time h.m.	Height ft	Time h.m.	Height ft
0500	3.1	1114	14.7
1746	2.5	2356	13.4

An inspection of the above example shows that the desired time falls between the two morning tides.

The duration of rise is $11^h 14^m - 5^h 00^m = 6^h 14^m$.

The time after low water for which the height is required is $7^h 35^m - 5h\ 00^m = 2^h 35^m$.

The range of tide is 14.7 −3.1 = 11.6 feet.

The duration of rise or fall in table 3 is given in heavy-faced type for each 20 minutes from $4^h 00^m$ to $10^h 40^m$. The nearest tabular value of $6^h 14^m$, the above duration of rise, is $6^h 20^m$; and on the horizontal line of $6^h 20^m$ the nearest tabular time to $2^h 35^m$ after low water for which the height is required is $2^h 32^m$. Following down the column in which this $2^h 32^m$ is found to its intersection with the line of the range 11.5 feet (the nearest tabular value to the above range of 11.6 feet), the correction is found to be 4.0 feet, which, being reckoned from low water, must be added, making 3.1 + 4.0 = 7.1 feet or 2.2 meters which is the required height above mean low water springs, the datum for Balboa.

Example 2.—Find the height of the tide at 0300 at Los Angeles, Calif., on a day when the predicted tides from table 1 are given as:

High Water		Low Water	
Time h.m.	Height ft	Time h.m.	Height ft
0039	4.9	0814	0.2
1510	3.1	1933	2.4

The duration of fall is $08^h 14^m - 00^h 39^m$ - $7^h 35^m$.

The time after high water for which the height is required is $03^h 00^m - 00^h 39^m = 02^h 21^m$.

The range of tide is 4.9−0.2 = 4.7 feet.

Entering table 3 at the duration of fall of $7^h 40^m$, which is the nearest value to $7^h 35^m$, the nearest value on the horizontal line to $2^h 21^m$ is $2^h 18^m$ after high water. Following down this column to its intersection with a range of 4.5 feet which is the nearest tabular value to 4.7 feet, one obtains 0.9 which, being calculated from high water, must be subtracted from it. The approximate height at $03^h 00^m$ is, therefore, 4.9−0.9 = 4.0 feet or 1.2 meters.

When the duration of rise or fall is greater than $10^h 40^m$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or fall is less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in table 2, predictions of the high and low waters for the day in question should be obtained by the use of the differences given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing examples.

GRAPHICAL METHOD

If the height of the tide is required for a number of times on a certain day the full tide curve for the day may be obtained by the *one-quarter, one-tenth rule*. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution. Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at 03^h 00^m could be determined as shown below.

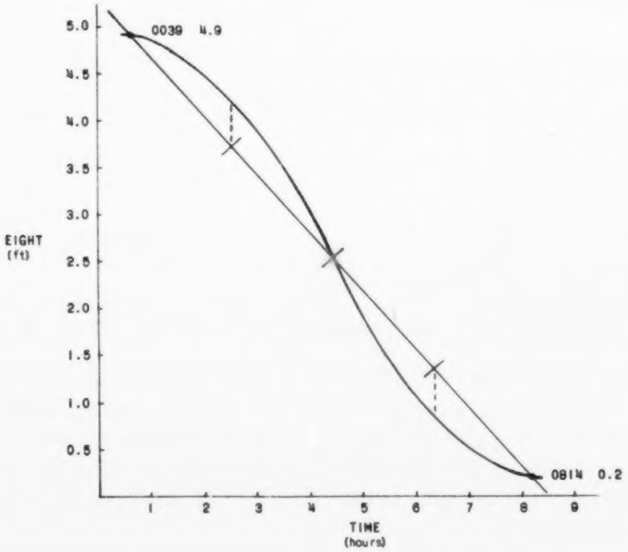

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

Duration of rise or fall, see footnote	Time from the nearest high water or low water														
h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.	h.m.
4 00	0 08	0 16	0 24	0 32	0 40	0 48	0 56	1 04	1 12	1 20	1 28	1 36	1 44	1 52	2 00
4 20	0 09	0 17	0 26	0 35	0 43	0 52	1 01	1 09	1 18	1 27	1 35	1 44	1 53	2 01	2 10
4 40	0 09	0 19	0 28	0 37	0 47	0 56	1 05	1 15	1 24	1 33	1 43	1 52	2 01	2 11	2 20
5 00	0 10	0 20	0 30	0 40	0 50	1 00	1 10	1 20	1 30	1 40	1 50	2 00	2 10	2 20	2 30
5 20	0 11	0 21	0 32	0 43	0 53	1 04	1 15	1 25	1 36	1 47	1 57	2 08	2 19	2 29	2 40
5 40	0 11	0 23	0 34	0 45	0 57	1 08	1 19	1 31	1 42	1 53	2 05	2 16	2 27	2 39	2 50
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30
7 20	0 15	0 29	0 44	0 59	1 13	1 28	1 43	1 57	2 12	2 27	2 41	2 56	3 11	3 25	3 40
7 40	0 15	0 31	0 46	1 01	1 17	1 32	1 47	2 03	2 18	2 33	2 49	3 04	3 19	3 35	3 50
8 00	0 16	0 32	0 48	1 04	1 20	1 36	1 52	2 08	2 24	2 40	2 56	3 12	3 28	3 44	4 00
8 20	0 17	0 33	0 50	1 07	1 23	1 40	1 57	2 13	2 30	2 47	3 03	3 20	3 37	3 53	4 10
8 40	0 17	0 35	0 52	1 09	1 27	1 44	2 01	2 19	2 36	2 53	3 11	3 28	3 45	4 03	4 20
9 00	0 18	0 36	0 54	1 12	1 30	1 48	2 06	2 24	2 42	3 00	3 18	3 36	3 54	4 12	4 30
9 20	0 19	0 37	0 56	1 15	1 33	1 52	2 11	2 29	2 48	3 07	3 25	3 44	4 03	4 21	4 40
9 40	0 19	0 39	0 58	1 17	1 37	1 56	2 15	2 35	2 54	3 13	3 33	3 52	4 11	4 31	4 50
10 00	0 20	0 40	1 00	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00
10 20	0 21	0 41	1 02	1 23	1 43	2 04	2 25	2 45	3 06	3 27	3 47	4 08	4 29	4 49	5 10
10 40	0 21	0 43	1 04	1 25	1 47	2 08	2 29	2 51	3 12	3 33	3 55	4 16	4 37	4 59	5 20

Range of tide, see footnote	Correction to height														
Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.	Ft.
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2
1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8
2.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2
3.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5
9.5	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8
10.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0
10.5	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2
11.0	0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.8	2.3	2.8	3.3	3.8	4.4	4.9	5.5
11.5	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.4	2.9	3.4	4.0	4.6	5.1	5.8
12.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	2.0	2.5	3.0	3.6	4.1	4.8	5.4	6.0
12.5	0.0	0.1	0.3	0.5	0.8	1.2	1.6	2.1	2.6	3.1	3.7	4.3	5.0	5.6	6.2
13.0	0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5
13.5	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8
14.0	0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0
14.5	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2
15.0	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5
15.5	0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8
16.0	0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0
16.5	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2
17.0	0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5
17.5	0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.8
18.0	0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0
18.5	0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2
19.0	0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5
19.5	0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.8
20.0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	9.0	10.0

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low water, add the correction.

TABLE 4.—LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is 90°50', 34' having been allowed for horizontal refraction and 16' for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The values obtained from table 4 may be converted to standard time by means of table 5, which follows it.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		0°		5° N		10° N		15° N		20° N		25° N	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22
	6	06 02	18 09	06 11	18 01	06 19	17 53	06 28	17 44	06 36	17 35	06 46	17 26
	11	06 04	18 12	06 12	18 04	06 20	17 55	06 29	17 47	06 38	17 38	06 47	17 29
	16	06 06	18 13	06 14	18 06	06 21	17 58	06 30	17 50	06 38	17 42	06 47	17 33
	21	06 08	18 15	06 15	18 08	06 22	18 00	06 30	17 53	06 38	17 45	06 46	17 37
	26	06 09	18 16	06 15	18 10	06 23	18 02	06 30	17 56	06 37	17 48	06 45	17 41
	31	06 10	18 17	06 16	18 11	06 23	18 04	06 29	17 58	06 36	17 51	06 43	17 44
Feb.	5	06 11	18 18	06 16	18 12	06 22	18 06	06 28	18 00	06 34	17 54	06 41	17 48
	10	06 11	18 18	06 16	18 13	06 21	18 07	06 27	18 02	06 32	17 57	06 38	17 51
	15	06 11	18 18	06 15	18 13	06 20	18 09	06 25	18 04	06 30	17 59	06 35	17 54
	20	06 10	18 17	06 14	18 13	06 18	18 10	06 22	18 06	06 27	18 01	06 31	17 57
	25	06 10	18 17	06 13	18 13	06 16	18 10	06 20	18 07	06 23	18 03	06 27	18 00
Mar.	2	06 09	18 16	06 12	18 13	06 14	18 11	06 17	18 08	06 20	18 05	06 22	18 03
	7	06 08	18 15	06 10	18 13	06 12	18 11	06 14	18 09	06 16	18 07	06 18	18 05
	12	06 07	18 13	06 08	18 12	06 09	18 11	06 10	18 10	06 12	18 09	06 13	18 08
	17	06 05	18 12	06 06	18 11	06 06	18 11	06 07	18 11	06 07	18 10	06 08	18 10
	22	06 04	18 10	06 04	18 11	06 04	18 11	06 03	18 11	06 03	18 11	06 02	18 12
	27	06 02	18 09	06 01	18 10	06 01	18 11	05 59	18 12	05 59	18 13	05 57	18 14
Apr.	1	06 01	18 07	05 59	18 09	05 58	18 11	05 56	18 12	05 54	18 14	05 52	18 16
	6	05 59	18 06	05 57	18 08	05 55	18 11	05 52	18 13	05 50	18 16	05 47	18 18
	11	05 58	18 05	05 55	18 07	05 52	18 10	05 49	18 14	05 46	18 17	05 42	18 21
	16	05 57	18 03	05 53	18 07	05 50	18 11	05 46	18 14	05 42	18 18	05 37	18 23
	21	05 56	18 02	05 51	18 06	05 47	18 11	05 42	18 15	05 38	18 20	05 33	18 25
	26	05 55	18 01	05 50	18 06	05 45	18 11	05 40	18 16	05 34	18 21	05 28	18 28
May	1	05 54	18 01	05 48	18 06	05 43	18 12	05 37	18 17	05 31	18 23	05 25	18 30
	6	05 53	18 00	05 47	18 06	05 41	18 12	05 35	18 19	05 28	18 25	05 21	18 33
	11	05 53	18 00	05 46	18 06	05 40	18 13	05 33	18 20	05 26	18 27	05 18	18 35
	16	05 53	18 00	05 46	18 07	05 39	18 14	05 31	18 21	05 24	18 29	05 15	18 38
	21	05 53	18 00	05 46	18 08	05 38	18 15	05 30	18 23	05 22	18 31	05 13	18 40
	26	05 53	18 00	05 46	18 08	05 38	18 16	05 29	18 25	05 21	18 33	05 11	18 43
	31	05 54	18 01	05 46	18 09	05 38	18 18	05 29	18 26	05 20	18 35	05 10	18 45
June	5	05 55	18 02	05 46	18 10	05 38	18 19	05 29	18 28	05 20	18 37	05 10	18 47
	10	05 56	18 03	05 47	18 12	05 38	18 20	05 29	18 29	05 20	18 39	05 10	18 49
	15	05 57	18 04	05 48	18 13	05 39	18 21	05 30	18 31	05 20	18 40	05 10	18 51
	20	05 58	18 05	05 49	18 14	05 40	18 23	05 31	18 32	05 21	18 42	05 11	18 52
	25	05 59	18 06	05 50	18 15	05 41	18 24	05 32	18 33	05 22	18 43	05 12	18 53
	30	06 00	18 07	05 51	18 16	05 42	18 25	05 33	18 34	05 24	18 43	05 13	18 54
July	5	06 01	18 08	05 52	18 17	05 44	18 25	05 35	18 34	05 25	18 44	05 15	18 54
	10	06 02	18 09	05 53	18 17	05 45	18 25	05 36	18 34	05 27	18 43	05 17	18 53
	15	06 02	18 09	05 54	18 17	05 46	18 26	05 38	18 34	05 29	18 43	05 19	18 52
	20	06 03	18 10	05 55	18 17	05 47	18 25	05 39	18 33	05 31	18 42	05 22	18 51
	25	06 03	18 10	05 56	18 17	05 48	18 25	05 41	18 32	05 32	18 40	05 24	18 49
	30	06 03	18 10	05 56	18 17	05 49	18 24	05 42	18 31	05 34	18 38	05 26	18 46
Aug.	4	06 03	18 10	05 56	18 16	05 50	18 22	05 43	18 29	05 36	18 36	05 29	18 43
	9	06 02	18 09	05 56	18 15	05 50	18 21	05 44	18 26	05 38	18 33	05 31	18 40
	14	06 01	18 08	05 56	18 13	05 51	18 19	05 45	18 24	05 39	18 30	05 33	18 36
	19	06 00	18 07	05 56	18 11	05 51	18 16	05 46	18 21	05 41	18 26	05 35	18 31
	24	05 59	18 06	05 55	18 10	05 51	18 14	05 47	18 18	05 42	18 23	05 38	18 27
	29	05 58	18 04	05 54	18 08	05 51	18 11	05 47	18 14	05 43	18 18	05 40	18 22
Sept.	3	05 56	18 03	05 53	18 05	05 51	18 08	05 48	18 11	05 45	18 14	05 42	18 17
	8	05 55	18 01	05 52	18 03	05 50	18 05	05 48	18 07	05 46	18 10	05 43	18 12
	13	05 53	17 59	05 51	18 01	05 50	18 02	05 48	18 03	05 47	18 05	05 45	18 07
	18	05 51	17 58	05 50	17 58	05 50	17 59	05 49	18 00	05 48	18 01	05 47	18 01
	23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
	28	05 48	17 54	05 48	17 53	05 49	17 53	05 49	17 52	05 50	17 51	05 51	17 50
Oct.	3	05 46	17 52	05 47	17 51	05 49	17 50	05 50	17 48	05 51	17 47	05 53	17 45
	8	05 44	17 51	05 46	17 49	05 48	17 47	05 51	17 45	05 52	17 43	05 55	17 40
	13	05 43	17 50	05 46	17 47	05 18	17 44	05 51	17 41	05 54	17 39	05 57	17 35
	18	05 42	17 49	05 45	17 45	05 49	17 42	05 52	17 38	05 56	17 35	06 00	17 31
	23	05 41	17 48	05 45	17 44	05 49	17 40	05 53	17 35	05 57	17 31	06 02	17 26
	28	05 41	17 47	05 45	17 43	05 50	17 38	05 55	17 33	05 59	17 28	06 05	17 22
Nov.	2	05 40	17 47	05 45	17 42	05 51	17 37	05 56	17 31	06 02	17 25	06 08	17 19
	7	05 40	17 47	05 46	17 41	05 52	17 36	05 58	17 29	06 04	17 23	06 11	17 16
	12	05 41	17 48	05 47	17 41	05 53	17 35	06 00	17 28	06 07	17 21	06 14	17 14
	17	05 41	17 48	05 48	17 42	05 55	17 35	06 02	17 27	06 10	17 20	06 18	17 12
	22	05 42	17 50	05 50	17 42	05 57	17 35	06 05	17 27	06 13	17 19	06 21	17 11
	27	05 44	17 51	05 52	17 44	05 59	17 36	06 08	17 28	06 16	17 19	06 25	17 10
Dec.	2	05 46	17 53	05 54	17 45	06 02	17 37	06 10	17 28	06 19	17 19	06 29	17 10
	7	05 48	17 55	05 56	17 47	06 04	17 38	06 13	17 30	06 22	17 20	06 32	17 11
	12	05 50	17 57	05 59	17 49	06 07	17 40	06 16	17 31	06 25	17 22	06 35	17 12
	17	05 52	18 00	06 01	17 51	06 09	17 42	06 19	17 33	06 28	17 24	06 38	17 14
	22	05 54	18 02	06 03	17 53	06 12	17 45	06 21	17 35	06 31	17 26	06 40	17 16
	27	05 57	18 05	06 06	17 56	06 14	17 47	06 24	17 39	06 33	17 29	06 43	17 19
Jan.	1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 40	06 35	17 31	06 45	17 21

---

* Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		30° N		32° N		34° N		36° N		38° N		40° N	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	06 56	17 11	07 01	17 07	07 06	17 02	07 11	16 57	07 16	16 51	07 22	16 44
	6	06 57	17 15	07 02	17 11	07 06	17 06	07 11	17 01	07 17	16 56	07 22	16 49
	11	06 57	17 19	07 02	17 15	07 06	17 10	07 11	17 05	07 16	17 00	07 22	16 54
	16	06 57	17 23	07 01	17 19	07 05	17 15	07 10	17 10	07 15	17 05	07 20	17 00
	21	06 56	17 27	06 59	17 24	07 04	17 20	07 08	17 15	07 12	17 11	07 18	17 05
	26	06 54	17 32	06 57	17 28	07 01	17 25	07 05	17 21	07 09	17 16	07 14	17 11
	31	06 51	17 36	06 55	17 33	06 58	17 29	07 02	17 26	07 06	17 22	07 10	17 17
Feb.	5	06 48	17 40	06 51	17 37	06 54	17 34	06 58	17 31	07 01	17 27	07 05	17 23
	10	06 45	17 44	06 47	17 42	06 50	17 39	06 53	17 36	06 56	17 33	07 00	17 29
	15	06 41	17 48	06 43	17 46	06 45	17 44	06 48	17 41	06 50	17 39	06 54	17 35
	20	06 36	17 52	06 38	17 50	06 40	17 48	06 42	17 46	06 44	17 44	06 47	17 41
	25	06 31	17 56	06 32	17 55	06 34	17 53	06 35	17 51	06 39	17 49	06 41	17 47
Mar.	2	06 26	17 59	06 27	17 58	06 28	17 57	06 29	17 56	06 31	17 54	06 33	17 52
	7	06 20	18 03	06 21	18 02	06 22	18 01	06 23	18 00	06 25	17 59	06 26	17 58
	12	06 14	18 06	06 14	18 06	06 15	18 05	06 16	18 05	06 17	18 04	06 18	18 03
	17	06 09	18 09	06 09	18 09	06 09	18 09	06 09	18 09	06 10	18 09	06 10	18 08
	22	06 02	18 12	06 02	18 12	06 02	18 13	06 02	18 13	06 02	18 13	06 02	18 13
	27	05 56	18 15	05 56	18 16	05 55	18 17	05 54	18 17	05 53	18 18	05 53	18 18
Apr.	1	05 50	18 18	05 49	18 20	05 48	18 21	05 47	18 22	05 46	18 23	05 45	18 24
	6	05 44	18 21	05 43	18 23	05 41	18 24	05 40	18 26	05 38	18 27	05 37	18 29
	11	05 39	18 24	05 36	18 26	05 35	18 28	05 33	18 30	05 32	18 32	05 30	18 34
	16	05 33	18 27	05 31	18 30	05 29	18 32	05 26	18 34	05 24	18 37	05 22	18 39
	21	05 28	18 31	05 26	18 33	05 23	18 36	05 20	18 39	05 17	18 41	05 15	18 44
	26	05 23	18 34	05 19	18 37	05 17	18 40	05 13	18 43	05 10	18 46	05 08	18 49
May	1	05 18	18 37	05 14	18 40	05 11	18 43	05 08	18 47	05 04	18 51	05 01	18 54
	6	05 14	18 40	05 10	18 44	05 06	18 47	05 03	18 51	04 59	18 55	04 55	18 59
	11	05 10	18 43	05 06	18 47	05 02	18 51	04 58	18 55	04 54	19 00	04 49	19 04
	16	05 06	18 47	05 02	18 51	04 58	18 55	04 54	18 59	04 49	19 04	04 45	19 09
	21	05 04	18 50	04 59	18 54	04 55	18 59	04 50	19 03	04 45	19 08	04 40	19 13
	26	05 01	18 53	04 57	18 57	04 52	19 02	04 47	19 07	04 42	19 12	04 37	19 18
	31	05 00	18 56	04 55	19 00	04 50	19 05	04 45	19 11	04 40	19 16	04 34	19 21
June	5	04 59	18 58	04 54	19 03	04 49	19 08	04 43	19 14	04 38	19 19	04 32	19 25
	10	04 58	19 00	04 53	19 05	04 48	19 11	04 43	19 17	04 37	19 22	04 31	19 28
	15	04 58	19 02	04 53	19 07	04 48	19 13	04 43	19 18	04 37	19 24	04 30	19 30
	20	04 59	19 04	04 54	19 09	04 49	19 14	04 43	19 20	04 37	19 26	04 31	19 32
	25	05 00	19 05	04 55	19 10	04 50	19 15	04 44	19 21	04 38	19 26	04 32	19 33
	30	05 02	19 05	04 57	19 10	04 52	19 15	04 46	19 21	04 40	19 27	04 34	19 33
July	5	05 04	19 05	04 59	19 10	04 54	19 15	04 49	19 20	04 43	19 26	04 36	19 32
	10	05 06	19 04	05 02	19 09	04 57	19 14	04 51	19 19	04 46	19 25	04 39	19 31
	15	05 09	19 03	05 04	19 07	05 00	19 12	04 54	19 17	04 49	19 22	04 43	19 28
	20	05 11	19 01	05 07	19 05	05 03	19 10	04 58	19 14	04 53	19 19	04 47	19 25
	25	05 14	18 58	05 10	19 02	05 06	19 06	05 02	19 11	04 57	19 16	04 51	19 21
	30	05 17	18 55	05 14	18 59	05 10	19 03	05 05	19 07	05 01	19 11	04 56	19 17
Aug.	4	05 20	18 52	05 17	18 55	05 13	18 58	05 09	19 02	05 05	19 06	05 00	19 11
	9	05 23	18 47	05 20	18 50	05 17	18 54	05 13	18 57	05 09	19 01	05 05	19 05
	14	05 26	18 43	05 24	18 45	05 21	18 48	05 17	18 52	05 14	18 55	05 10	18 59
	19	05 29	18 38	05 27	18 40	05 24	18 43	05 21	18 45	05 18	18 48	05 14	18 52
	24	05 32	18 33	05 30	18 34	05 28	18 37	05 25	18 39	05 23	18 42	05 19	18 45
	29	05 35	18 27	05 33	18 28	05 31	18 30	05 29	18 32	05 27	18 34	05 24	18 37
Sept.	3	05 38	18 21	05 36	18 22	05 35	18 24	05 33	18 25	05 31	18 28	05 29	18 30
	8	05 40	18 15	05 39	18 16	05 38	18 17	05 37	18 18	05 35	18 19	05 34	18 22
	13	05 43	18 09	05 42	18 10	05 42	18 11	05 41	18 11	05 40	18 12	05 38	18 13
	18	05 46	18 03	05 46	18 03	05 45	18 04	05 44	18 04	05 43	18 05	05 43	18 05
	23	05 48	17 56	05 48	17 56	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 57
	28	05 51	17 50	05 51	17 50	05 52	17 49	05 52	17 49	05 53	17 49	05 53	17 49
Oct.	3	05 54	17 44	05 55	17 43	05 56	17 42	05 56	17 41	05 57	17 41	05 57	17 40
	8	05 57	17 38	05 58	17 36	05 59	17 35	06 00	17 34	06 01	17 33	06 02	17 32
	13	06 00	17 32	06 02	17 31	06 03	17 29	06 05	17 27	06 06	17 26	06 08	17 25
	18	06 03	17 27	06 05	17 25	06 07	17 23	06 09	17 21	06 11	17 19	06 13	17 17
	23	06 07	17 22	06 09	17 19	06 11	17 17	06 14	17 15	06 16	17 12	06 18	17 10
	28	06 10	17 17	06 13	17 14	06 16	17 12	06 18	17 09	06 21	17 06	06 24	17 04
Nov.	2	06 14	17 13	06 17	17 10	06 20	17 07	06 23	17 04	06 26	17 00	06 29	16 57
	7	06 18	17 09	06 22	17 06	06 25	17 02	06 28	16 59	06 32	16 55	06 35	16 52
	12	06 22	17 06	06 26	17 02	06 29	16 59	06 33	16 55	06 37	16 51	06 41	16 47
	17	06 26	17 03	06 30	16 59	06 34	16 56	06 38	16 51	06 43	16 47	06 47	16 43
	22	06 30	17 01	06 35	16 57	06 39	16 53	06 43	16 49	06 48	16 44	06 52	16 39
	27	06 34	17 00	06 39	16 56	06 44	16 52	06 48	16 47	06 53	16 42	06 58	16 37
Dec.	2	06 38	17 00	06 43	16 55	06 48	16 51	06 53	16 46	06 58	16 41	07 03	16 35
	7	06 42	17 00	06 47	16 56	06 52	16 51	06 57	16 46	07 02	16 40	07 08	16 35
	12	06 46	17 01	06 51	16 56	06 56	16 52	07 01	16 46	07 07	16 41	07 12	16 35
	17	06 49	17 03	06 54	16 58	06 59	16 53	07 04	16 48	07 10	16 42	07 16	16 36
	22	06 52	17 05	06 56	17 00	07 01	16 55	07 07	16 49	07 12	16 44	07 18	16 38
	27	06 54	17 08	06 59	17 03	07 04	16 58	07 09	16 53	07 15	16 47	07 20	16 41
Jan.	1	06 56	17 11	07 01	17 07	07 06	17 01	07 11	16 56	07 16	16 50	07 22	16 44

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date	42° N		44° N		46° N		48° N		50° N		52° N	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan. 1	07 28	16 38	07 35	16 32	07 42	16 25	07 50	16 17	07 59	16 08	08 08	15 58
6	07 28	16 44	07 35	16 37	07 42	16 30	07 49	16 23	07 58	16 14	08 07	16 04
11	07 27	16 49	07 34	16 43	07 41	16 36	07 48	16 29	07 56	16 20	08 05	16 11
16	07 25	16 55	07 31	16 48	07 38	16 41	07 45	16 34	07 53	16 27	08 01	16 19
21	07 22	17 01	07 28	16 54	07 34	16 48	07 41	16 42	07 48	16 35	07 56	16 27
26	07 19	17 07	07 25	17 02	07 31	16 55	07 37	16 49	07 43	16 43	07 50	16 36
31	07 14	17 12	07 19	17 07	07 24	17 02	07 29	16 57	07 36	16 51	07 43	16 45
Feb. 5	07 09	17 20	07 14	17 16	07 19	17 10	07 24	17 05	07 29	17 00	07 35	16 54
10	07 03	17 25	07 07	17 22	07 12	17 17	07 15	17 13	07 21	17 09	07 26	17 03
15	06 56	17 33	07 00	17 29	07 03	17 25	07 08	17 21	07 12	17 17	07 17	17 13
20	06 49	17 39	06 52	17 35	06 56	17 32	06 59	17 29	07 03	17 26	07 07	17 22
25	06 43	17 45	06 45	17 42	06 47	17 39	06 50	17 37	06 53	17 34	06 56	17 31
Mar. 2	06 34	17 50	06 37	17 48	06 39	17 47	06 41	17 45	06 43	17 43	06 45	17 40
7	06 27	17 57	06 28	17 56	06 30	17 54	06 31	17 53	06 33	17 51	06 34	17 49
12	06 19	18 02	06 20	18 01	06 20	18 01	06 21	18 00	06 22	17 59	06 23	17 58
17	06 10	18 08	06 10	18 08	06 10	18 08	06 11	18 07	06 11	18 07	06 11	18 07
22	06 02	18 13	06 01	18 14	06 01	18 14	06 00	18 15	06 00	18 15	06 00	18 15
27	05 53	18 19	05 52	18 20	05 51	18 21	05 50	18 22	05 49	18 23	05 48	18 24
Apr. 1	05 44	18 25	05 43	18 26	05 42	18 28	05 40	18 30	05 38	18 31	05 37	18 33
6	05 36	18 31	05 34	18 33	05 32	18 35	05 30	18 37	05 28	18 39	05 25	18 41
11	05 28	18 36	05 25	18 38	05 23	18 40	05 20	18 43	05 17	18 46	05 14	18 50
16	05 20	18 42	05 17	18 45	05 14	18 48	05 10	18 51	05 07	18 54	05 03	18 58
21	05 12	18 48	05 09	18 51	05 05	18 54	05 01	18 58	04 57	19 02	04 52	19 07
26	05 04	18 53	05 00	18 57	04 56	19 01	04 52	19 06	04 47	19 10	04 42	19 15
May 1	04 57	18 57	04 53	19 03	04 47	19 08	04 42	19 13	04 38	19 18	04 32	19 24
6	04 50	19 04	04 45	19 09	04 40	19 14	04 35	19 19	04 29	19 25	04 22	19 32
11	04 44	19 09	04 39	19 14	04 33	19 20	04 27	19 26	04 21	19 33	04 14	19 40
16	04 39	19 14	04 34	19 20	04 27	19 26	04 20	19 33	04 14	19 40	04 06	19 48
21	04 34	19 19	04 28	19 25	04 21	19 32	04 14	19 39	04 07	19 47	03 59	19 55
26	04 31	19 24	04 24	19 30	04 17	19 37	04 10	19 45	04 02	19 53	03 52	20 02
31	04 28	19 28	04 21	19 35	04 14	19 42	04 06	19 50	03 57	19 59	03 47	20 08
June 5	04 25	19 32	04 18	19 39	04 11	19 46	04 03	19 54	03 54	20 03	03 43	20 14
10	04 24	19 35	04 17	19 42	04 09	19 50	04 01	19 58	03 51	20 08	03 41	20 18
15	04 24	19 37	04 16	19 44	04 09	19 52	04 00	20 01	03 50	20 11	03 39	20 21
20	04 24	19 39	04 17	19 46	04 09	19 54	04 00	20 03	03 50	20 12	03 39	20 23
25	04 25	19 40	04 18	19 47	04 10	19 55	04 01	20 04	03 51	20 13	03 41	20 24
30	04 27	19 40	04 20	19 47	04 12	19 55	04 03	20 03	03 54	20 13	03 43	20 24
July 5	04 30	19 39	04 23	19 46	04 15	19 53	04 07	20 02	03 57	20 11	03 47	20 22
10	04 33	19 37	04 26	19 44	04 19	19 51	04 11	19 59	04 01	20 08	03 51	20 18
15	04 37	19 34	04 31	19 41	04 24	19 48	04 16	19 56	04 06	20 04	03 57	20 14
20	04 41	19 31	04 34	19 37	04 27	19 44	04 20	19 51	04 12	19 59	04 03	20 09
25	04 46	19 26	04 40	19 32	04 34	19 38	04 27	19 45	04 19	19 53	04 10	20 02
30	04 51	19 22	04 46	19 27	04 40	19 33	04 33	19 40	04 25	19 47	04 17	19 54
Aug. 4	04 56	19 15	04 51	19 21	04 45	19 27	04 39	19 33	04 32	19 39	04 25	19 46
9	05 01	19 09	04 57	19 15	04 52	19 20	04 46	19 25	04 39	19 31	04 33	19 37
14	05 06	19 02	05 02	19 06	04 58	19 12	04 53	19 17	04 47	19 22	04 41	19 27
19	05 11	18 56	05 08	19 00	05 04	19 04	04 59	19 08	04 54	19 12	04 49	19 17
24	05 17	18 47	05 14	18 50	05 10	18 54	05 06	18 58	05 02	19 02	04 57	19 07
29	05 22	18 40	05 19	18 43	05 15	18 46	05 12	18 49	05 09	18 52	05 05	18 56
Sept. 3	05 27	18 32	05 25	18 34	05 23	18 36	05 20	18 39	05 17	18 41	05 14	18 44
8	05 32	18 23	05 30	18 25	05 28	18 27	05 26	18 29	05 24	18 31	05 22	18 33
13	05 37	18 14	05 36	18 15	05 34	18 17	05 33	18 18	05 32	18 20	05 30	18 21
18	05 43	18 06	05 42	18 07	05 41	18 07	05 40	18 08	05 39	18 09	05 38	18 10
23	05 48	17 57	05 47	17 57	05 47	17 57	05 47	17 57	05 47	17 58	05 46	17 58
28	05 53	17 49	05 53	17 48	05 53	17 48	05 54	17 47	05 54	17 47	05 55	17 46
Oct. 3	05 58	17 39	05 59	17 38	06 00	17 38	06 01	17 37	06 02	17 36	06 03	17 35
8	06 04	17 31	06 05	17 30	06 07	17 28	06 09	17 27	06 10	17 25	06 11	17 23
13	06 10	17 23	06 11	17 21	06 13	17 19	06 15	17 17	06 17	17 15	06 20	17 12
18	06 15	17 15	06 17	17 12	06 19	17 10	06 22	17 07	06 25	17 04	06 29	17 01
23	06 20	17 08	06 23	17 05	06 26	17 01	06 30	16 58	06 34	16 55	06 37	16 51
28	06 27	17 01	06 30	16 56	06 33	16 53	06 37	16 49	06 42	16 45	06 46	16 41
Nov. 2	06 33	16 53	06 37	16 49	06 41	16 45	06 45	16 41	06 50	16 36	06 55	16 31
7	06 40	16 47	06 44	16 43	06 49	16 38	06 54	16 33	06 58	16 28	07 04	16 22
12	06 46	16 42	06 51	16 37	06 56	16 32	07 01	16 27	07 07	16 21	07 13	16 14
17	06 52	16 38	06 57	16 33	07 02	16 27	07 08	16 21	07 15	16 14	07 22	16 07
22	06 58	16 34	07 04	16 28	07 10	16 22	07 16	16 16	07 23	16 09	07 31	16 01
27	07 04	16 31	07 10	16 25	07 16	16 19	07 22	16 12	07 30	16 04	07 39	15 56
Dec. 2	07 09	16 29	07 15	16 23	07 22	16 16	07 29	16 09	07 37	16 01	07 46	15 52
7	07 14	16 29	07 21	16 22	07 28	16 15	07 35	16 07	07 43	15 59	07 53	15 50
12	07 19	16 29	07 26	16 22	07 33	16 15	07 41	16 07	07 49	15 58	07 58	15 48
17	07 22	16 30	07 29	16 23	07 36	16 16	07 44	16 08	07 53	15 59	08 03	15 49
22	07 25	16 32	07 32	16 25	07 39	16 17	07 47	16 09	07 56	16 00	08 06	15 51
27	07 27	16 35	07 34	16 28	07 41	16 21	07 49	16 13	07 58	16 04	08 08	15 54
Jan. 1	07 28	16 38	07 35	16 32	07 42	16 24	07 50	16 16	07 59	16 08	08 08	15 58

Local mean time. To obtain standard time of rise or set, see table 5.

Date		54° N		56° N		58° N		60° N		62° N		64° N	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	08 19	15 47	08 32	15 35	08 46	15 21	09 03	15 04	09 24	14 43	09 50	14 16
	6	08 18	15 54	08 30	15 42	08 43	15 28	08 59	15 12	09 19	14 53	09 44	14 27
	11	08 15	16 01	08 26	15 50	08 39	15 37	08 54	15 22	09 13	15 03	09 36	14 40
	16	08 10	16 09	08 21	15 59	08 33	15 47	08 47	15 33	09 04	15 16	09 25	14 55
	21	08 05	16 18	08 15	16 08	08 26	15 57	08 39	15 44	08 54	15 29	09 13	15 11
	26	07 58	16 28	08 07	15 19	08 17	16 09	08 29	15 57	08 43	15 43	08 59	15 27
	31	07 50	16 38	07 58	16 29	08 07	16 20	08 18	16 10	08 30	15 58	08 45	15 43
Feb.	5	07 41	16 48	07 49	16 40	07 57	16 32	08 06	16 23	08 17	16 12	08 29	16 00
	10	07 32	16 58	07 38	16 51	07 45	16 44	07 53	16 36	08 03	16 27	08 14	16 16
	15	07 22	17 08	07 27	17 02	07 33	16 56	07 40	16 49	07 48	16 41	07 57	16 32
	20	07 11	17 18	07 15	17 13	07 21	17 08	07 26	17 02	07 33	16 56	07 41	16 48
	25	07 00	17 28	07 03	17 24	07 08	17 20	07 12	17 15	07 18	17 10	07 24	17 04
Mar.	2	06 48	17 38	06 51	17 35	06 54	17 32	06 58	17 28	07 02	17 24	07 07	17 20
	7	06 36	17 47	06 38	17 45	06 41	17 43	06 43	17 41	06 46	17 38	06 49	17 35
	12	06 24	17 57	06 25	17 56	06 27	17 55	06 28	17 53	06 30	17 52	06 32	17 50
	17	06 12	18 06	06 12	18 06	06 13	18 06	06 13	18 05	06 14	18 05	06 14	18 05
	22	05 59	18 16	05 59	18 16	05 59	18 17	05 58	18 18	05 57	18 18	05 57	18 19
	27	05 47	18 25	05 46	18 27	05 44	18 28	05 43	18 30	05 41	18 32	05 39	18 34
Apr.	1	05 35	18 35	05 33	18 37	05 30	18 39	05 28	18 42	05 25	18 45	05 21	18 49
	6	05 23	18 44	05 20	18 47	05 16	18 50	05 13	18 54	05 08	18 59	05 03	19 04
	11	05 11	18 53	05 07	18 57	05 02	19 02	04 58	19 07	04 52	19 12	04 46	19 19
	16	04 59	19 03	04 54	19 07	04 49	19 13	04 43	19 19	04 36	19 26	04 28	19 34
	21	04 47	19 12	04 42	19 18	04 35	19 24	04 28	19 31	04 20	19 39	04 11	19 49
	26	04 36	19 21	04 29	19 28	04 22	19 35	04 14	19 44	04 04	19 53	03 53	20 05
May	1	04 25	19 30	04 18	19 38	04 10	19 46	04 00	19 56	03 49	20 07	03 36	20 21
	6	04 15	19 39	04 07	19 48	03 57	19 57	03 47	20 08	03 34	20 21	03 19	20 37
	11	04 06	19 48	03 56	19 58	03 46	20 08	03 34	20 21	03 20	20 35	03 02	20 53
	16	03 57	19 57	03 47	20 07	03 35	20 19	03 22	20 33	03 06	20 49	02 46	21 09
	21	03 49	20 05	03 38	20 16	03 25	20 29	03 11	20 44	02 53	21 02	02 31	21 25
	26	03 42	20 13	03 30	20 25	03 17	20 38	03 01	20 55	02 41	21 15	02 16	21 40
	31	03 36	20 19	03 24	20 32	03 09	20 47	02 52	21 04	02 30	21 26	02 02	21 55
June	5	03 32	20 25	03 19	20 39	03 03	20 54	02 45	21 13	02 21	21 37	01 50	22 08
	10	03 29	20 30	03 15	20 44	02 59	21 00	02 39	21 20	02 15	21 45	01 40	22 20
	15	03 27	20 34	03 13	20 48	02 56	21 04	02 36	21 25	02 10	21 51	01 34	22 28
	20	03 27	20 36	03 13	20 50	02 56	21 07	02 35	21 27	02 09	21 54	01 31	22 32
	25	03 28	20 36	03 14	20 51	02 57	21 07	02 37	21 28	02 10	21 54	01 32	22 32
	30	03 31	20 36	03 17	20 50	03 00	21 06	02 40	21 26	02 14	21 52	01 38	22 28
July	5	03 35	20 33	03 21	20 47	03 05	21 03	02 46	21 22	02 21	21 46	01 47	22 20
	10	03 40	20 30	03 27	20 43	03 11	20 58	02 53	21 16	02 30	21 39	01 59	22 09
	15	03 46	20 25	03 34	20 37	03 19	20 51	03 02	21 08	02 41	21 29	02 13	21 56
	20	03 53	20 19	03 41	20 30	03 28	20 43	03 12	20 59	02 53	21 18	02 28	21 42
	25	04 00	20 11	03 50	20 22	03 37	20 34	03 23	20 49	03 05	21 06	02 43	21 27
	30	04 09	20 03	03 59	20 13	03 47	20 24	03 34	20 37	03 18	20 53	02 59	21 11
Aug.	4	04 17	19 54	04 08	20 03	03 58	20 13	03 46	20 25	03 32	20 38	03 15	20 55
	9	04 26	19 44	04 18	19 52	04 08	20 01	03 58	20 12	03 45	20 24	03 31	20 38
	14	04 35	19 34	04 27	19 41	04 19	19 49	04 10	19 58	03 59	20 09	03 46	20 21
	19	04 43	19 23	04 37	19 29	04 30	19 36	04 22	19 44	04 12	19 53	04 02	20 04
	24	04 52	19 11	04 47	19 17	04 41	19 23	04 34	19 30	04 26	19 37	04 17	19 46
	29	05 01	19 00	04 57	19 04	04 52	19 09	04 46	19 15	04 39	19 21	04 31	19 29
Sept.	3	05 10	18 48	05 07	18 51	05 02	18 55	04 58	19 00	04 52	19 05	04 46	19 11
	8	05 19	18 35	05 16	18 38	05 13	18 41	05 09	18 45	05 05	18 49	05 01	18 53
	13	05 28	18 23	05 26	18 25	05 24	18 27	05 21	18 30	05 18	18 32	05 15	18 36
	18	05 37	18 11	05 36	18 12	05 34	18 13	05 33	18 14	05 31	18 16	05 29	18 18
	23	05 46	17 58	05 46	17 58	05 45	17 59	05 45	17 59	05 44	18 00	05 43	18 00
	28	05 55	17 46	05 55	17 45	05 56	17 45	05 56	17 44	05 57	17 43	05 58	17 42
Oct.	3	06 04	17 33	06 05	17 32	06 07	17 31	06 08	17 29	06 10	17 27	06 12	17 25
	8	06 13	17 21	06 15	17 19	06 18	17 17	06 20	17 14	06 23	17 11	06 27	17 07
	13	06 23	17 09	06 26	17 06	06 29	17 03	06 33	16 59	06 37	16 55	06 41	16 50
	18	06 32	16 58	06 36	16 54	06 40	16 50	06 45	16 45	06 50	16 39	06 56	16 33
	23	06 42	16 46	06 46	16 42	06 52	16 36	06 57	16 30	07 04	16 24	07 12	16 16
	28	06 51	16 36	06 57	16 30	07 03	16 24	07 10	16 17	07 18	16 09	07 27	15 59
Nov.	2	07 01	16 25	07 08	16 19	07 15	16 12	07 23	16 03	07 32	15 54	07 43	15 43
	7	07 11	16 16	07 18	16 08	07 26	16 00	07 36	15 51	07 47	15 40	07 59	15 27
	12	07 21	16 07	07 29	15 59	07 38	15 50	07 49	15 39	08 01	15 27	08 15	15 12
	17	07 30	15 59	07 39	15 50	07 49	15 40	08 01	15 28	08 15	15 14	08 32	14 57
	22	07 39	15 52	07 49	15 42	08 00	15 31	08 13	15 18	08 29	15 03	08 47	14 44
	27	07 48	15 47	07 59	15 36	08 11	15 24	08 25	15 09	08 42	14 53	09 03	14 32
Dec.	2	07 56	15 42	08 07	15 31	08 20	15 18	08 36	15 02	08 54	14 44	09 17	14 21
	7	08 03	15 39	08 15	15 27	08 29	15 13	08 45	14 57	09 05	14 38	09 30	14 12
	12	08 09	15 38	08 22	15 25	08 36	15 11	08 53	14 54	09 14	14 33	09 40	14 06
	17	08 14	15 38	08 26	15 25	08 41	15 10	08 59	14 53	09 20	14 32	09 48	14 04
	22	08 17	15 39	08 30	15 27	08 45	15 12	09 02	14 54	09 24	14 33	09 52	14 04
	27	08 19	15 43	08 32	15 30	08 46	15 15	09 04	14 58	09 25	14 37	09 53	14 09
Jan.	1	08 19	15 47	08 32	15 35	08 46	15 21	09 03	15 04	09 24	14 43	09 51	14 16

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		66° N		68° N		70° N		72° N		74° N		76° N	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	10 29	13 37	Rises Jan. 4		Sun does not rise until Jan. 17.		Sun does not rise until Jan. 26.		Sun does not rise until Feb. 3.		Sun does not rise until Feb. 10.	
	6	10 19	13 53	11 27	12 45								
	11	10 06	14 10	10 56	13 20								
	16	09 52	14 28	10 32	13 48	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	21	09 36	14 47	10 08	14 15	11 02	13 21	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	26	09 20	15 06	09 46	14 40	10 25	14 01	11 53	12 34	.. ..	.. ..	.. ..	.. ..
	31	09 02	15 26	09 25	15 03	09 55	14 33	10 41	13 47	.. ..	.. ..	.. ..	.. ..
Feb.	5	08 45	15 45	09 03	15 26	09 28	15 02	10 01	14 29	11 00	13 30	.. ..	.. ..
	10	08 26	16 03	08 42	15 48	09 02	15 28	09 28	15 02	10 06	14 25	11 26	13 05
	15	08 08	16 22	08 21	16 09	08 37	15 53	08 58	15 32	09 25	15 05	10 10	14 21
	20	07 49	16 40	08 00	16 29	08 13	16 16	08 28	16 01	08 50	15 39	09 21	15 09
	25	07 31	16 57	07 39	16 49	07 49	16 39	08 01	16 27	08 18	16 12	08 40	15 48
Mar.	2	07 12	17 14	07 18	17 08	07 26	17 00	07 36	16 52	07 47	16 41	08 03	16 24
	7	06 53	17 31	06 57	17 27	07 03	17 22	07 10	17 16	07 17	17 07	07 28	16 57
	12	06 34	17 48	06 37	17 45	06 40	17 42	06 43	17 39	06 48	17 34	06 54	17 28
	17	06 15	18 04	06 16	18 04	06 17	18 03	06 17	18 02	06 19	18 02	06 21	17 59
	22	05 56	18 20	05 55	18 22	05 53	18 23	05 51	18 25	05 50	18 28	05 48	18 29
	27	05 36	18 37	05 34	18 40	05 30	18 43	05 25	18 48	05 21	18 53	05 15	19 00
Apr.	1	05 17	18 53	05 12	18 58	05 07	19 04	04 59	19 12	04 51	19 20	04 41	19 32
	6	04 58	19 10	04 51	19 17	04 43	19 25	04 34	19 36	04 21	19 48	04 05	20 05
	11	04 38	19 26	04 30	19 35	04 19	19 46	04 05	20 01	03 49	20 18	03 27	20 41
	16	04 19	19 43	04 08	19 55	03 55	20 09	03 38	20 27	03 15	20 50	02 44	21 23
	21	04 00	20 01	03 46	20 15	03 29	20 32	03 08	20 54	02 38	21 26	01 52	22 16
	26	03 40	20 18	03 24	20 35	03 03	20 57	02 35	21 26	01 54	22 10	.. ..	.. ..
May	1	03 20	20 37	03 01	20 57	02 35	21 24	01 58	22 03	00 49	23 31	.. ..	.. ..
	6	03 01	20 55	02 37	21 20	02 05	21 54	01 11	22 53	.. ..	.. ..	.. ..	.. ..
	11	02 41	21 15	02 12	21 45	01 29	22 31	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	16	02 21	21 35	01 46	22 12	00 36	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	21	02 01	21 56	01 14	22 45	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	26	01 40	22 17	00 29	23 47	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	31	01 20	22 39	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
June	5	00 57	23 03	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	10	00 32	23 33	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	15	Sun rises June 13; sets July 1.		Sun rises May 27; sets July 18.		Sun rises May 16; sets July 27.		Sun rises May 8; sets Aug. 4.		Sun rises May 2; sets Aug. 12.		Sun rises April 25; sets Aug. 18.	
	20												
	25												
	30	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
July	5	00 42	23 21	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	10	01 08	22 58	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	15	01 32	22 36	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	20	01 53	22 16	00 48	23 15	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	25	02 14	21 55	01 30	22 37	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	30	02 34	21 35	02 00	22 08	00 57	23 05	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Aug.	4	02 54	21 15	02 26	21 42	01 44	22 21	.. ..	23 57	.. ..	.. ..	.. ..	.. ..
	9	03 13	20 56	02 50	21 18	02 18	21 48	01 27	22 34	.. ..	.. ..	.. ..	.. ..
	14	03 31	20 36	03 12	20 54	02 47	21 18	02 12	21 51	01 06	22 49	.. ..	.. ..
	19	03 49	20 16	03 33	20 32	03 13	20 51	02 46	21 17	02 06	21 54	00 23	23 11
	24	04 06	19 57	03 53	20 09	03 36	20 25	03 16	20 46	02 47	21 12	01 59	21 56
	29	04 23	19 37	04 12	19 48	03 59	20 00	03 43	20 15	03 20	20 37	02 48	21 08
Sept.	3	04 39	19 18	04 30	19 26	04 20	19 36	04 08	19 49	03 52	20 04	03 27	20 26
	8	04 55	18 59	04 49	19 05	04 41	19 12	04 32	19 22	04 20	19 33	04 02	19 49
	13	05 11	18 39	05 07	18 43	05 01	18 49	04 55	18 54	04 47	19 03	04 34	19 14
	18	05 27	18 20	05 24	18 22	05 21	18 25	05 17	18 28	05 13	18 34	05 05	18 40
	23	05 43	18 01	05 42	18 01	05 41	18 02	05 40	18 03	05 38	18 05	05 35	18 07
	28	05 58	17 42	05 59	17 40	06 00	17 39	06 02	17 37	06 04	17 36	06 05	17 34
Oct.	3	06 14	17 22	06 17	17 20	06 20	17 16	06 25	17 11	06 30	17 07	06 35	17 01
	8	06 31	17 03	06 35	16 59	06 41	16 53	06 48	16 47	06 55	16 38	07 06	16 28
	13	06 47	16 44	06 53	16 38	07 01	16 30	07 11	16 19	07 24	16 08	07 38	15 52
	18	07 04	16 26	07 12	16 17	07 23	16 06	07 36	15 54	07 52	15 37	08 13	15 16
	23	07 21	16 07	07 31	15 56	07 45	15 43	08 02	15 27	08 23	15 04	08 52	14 34
	28	07 38	15 48	07 51	15 35	08 08	15 19	08 28	14 58	08 57	14 29	09 40	13 46
Nov.	2	07 56	15 30	08 12	15 14	08 32	14 54	08 59	14 27	09 37	13 47	10 58	12 28
	7	08 14	15 12	08 33	14 53	08 58	14 28	09 32	13 54	10 32	12 54	.. ..	.. ..
	12	08 33	14 54	08 56	14 32	09 26	14 01	10 15	13 12	.. ..	.. ..	.. ..	.. ..
	17	08 52	14 37	09 19	14 10	09 58	13 31	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	22	09 11	14 20	09 44	13 48	10 38	12 53	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	27	09 30	14 04	10 10	13 25	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
Dec.	2	09 48	13 50	10 38	13 00	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	7	10 05	13 37	11 13	12 29	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	12	10 19	13 28	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..
	17	10 30	13 22	Sun does not rise after Dec. 8.		Sun does not rise after Nov. 25.		Sun does not rise after Nov. 16.		Sun does not rise after Nov. 9.		Sun does not rise after Nov. 2.	
	22	10 35	13 21										
	27	10 35	13 27										
Jan.	1	10 30	13 37	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..	.. ..

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		0°		5° S		10° S		15° S		20° S		25° S	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	06 00	18 07	05 51	18 16	05 42	18 24	05 33	18 34	05 24	18 43	05 13	18 53
	6	06 02	18 09	05 54	18 18	05 45	18 26	05 36	18 35	05 27	18 44	05 16	18 54
	11	06 04	18 12	05 56	18 20	05 48	18 28	05 39	18 36	05 30	18 45	05 20	18 55
	16	06 06	18 13	05 58	18 21	05 50	18 29	05 41	18 37	05 33	18 45	05 24	18 55
	21	06 08	18 15	06 00	18 22	05 53	18 29	05 45	18 37	05 37	18 45	05 28	18 54
	26	06 09	18 16	06 02	18 23	05 55	18 30	05 48	18 37	05 40	18 45	05 32	18 53
	31	06 10	18 17	06 04	18 24	05 57	18 30	05 50	18 36	05 43	18 43	05 35	18 51
Feb.	5	06 11	18 18	06 05	18 24	05 59	18 29	05 52	18 35	05 46	18 42	05 38	18 49
	10	06 11	18 18	06 06	18 23	06 00	18 28	05 54	18 33	05 49	18 39	05 42	18 46
	15	06 11	18 18	06 06	18 22	06 02	18 27	05 56	18 32	05 51	18 37	05 46	18 43
	20	06 10	18 17	06 06	18 21	06 02	18 25	05 58	18 30	05 54	18 34	05 49	18 38
	25	06 10	18 17	06 06	18 20	06 03	18 23	06 00	18 26	05 56	18 30	05 52	18 34
Mar.	2	06 09	18 16	06 06	18 19	06 04	18 21	06 01	18 23	05 58	18 26	05 54	18 30
	7	06 08	18 15	06 06	18 17	06 04	18 19	06 02	18 21	06 00	18 23	05 57	18 25
	12	06 07	18 13	06 06	18 14	06 04	18 16	06 03	18 17	06 01	18 18	06 00	18 20
	17	06 05	18 12	06 05	18 12	06 04	18 13	06 04	18 14	06 03	18 14	06 02	18 15
	22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10
	27	06 02	18 09	06 03	18 08	06 04	18 07	06 04	18 06	06 05	18 05	06 06	18 05
Apr.	1	06 01	18 07	06 02	18 06	06 04	18 04	06 05	18 02	06 07	18 01	06 08	18 00
	6	05 59	18 06	06 01	18 04	06 04	18 02	06 06	17 59	06 08	17 57	06 10	17 55
	11	05 58	18 05	06 01	18 02	06 04	17 59	06 07	17 56	06 10	17 53	06 13	17 50
	16	05 57	18 03	06 00	18 00	06 04	17 56	06 08	17 53	06 11	17 49	06 15	17 45
	21	05 56	18 02	06 00	17 58	06 04	17 54	06 08	17 50	06 12	17 45	06 17	17 40
	26	05 55	18 01	06 00	17 56	06 04	17 52	06 09	17 47	06 14	17 42	06 19	17 36
May	1	05 54	18 01	05 59	17 55	06 04	17 50	06 10	17 44	06 16	17 39	06 22	17 32
	6	05 53	18 00	05 59	17 54	06 05	17 48	06 11	17 42	06 18	17 36	06 25	17 28
	11	05 53	18 00	05 59	17 53	06 06	17 47	06 12	17 40	06 19	17 33	06 27	17 25
	16	05 53	18 00	06 00	17 53	06 07	17 46	06 14	17 38	06 21	17 31	06 29	17 23
	21	05 53	18 00	06 00	17 52	06 08	17 45	06 16	17 37	06 23	17 30	06 32	17 21
	26	05 53	18 00	06 01	17 52	06 09	17 45	06 17	17 37	06 25	17 29	06 34	17 20
	31	05 54	18 01	06 02	17 53	06 10	17 45	06 18	17 36	06 27	17 28	06 37	17 18
June	5	05 55	18 02	06 03	17 53	06 11	17 45	06 20	17 36	06 29	17 28	06 39	17 17
	10	05 56	18 03	06 04	17 54	06 13	17 46	06 22	17 37	06 31	17 28	06 41	17 17
	15	05 57	18 04	06 05	17 55	06 14	17 47	06 23	17 38	06 32	17 28	06 43	17 17
	20	05 58	18 05	06 06	17 56	06 15	17 48	06 24	17 38	06 34	17 29	06 44	17 18
	25	05 59	18 06	06 07	17 57	06 16	17 49	06 25	17 39	06 35	17 30	06 45	17 19
	30	06 00	18 07	06 08	17 58	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 21
July	5	06 01	18 08	06 09	17 59	06 18	17 51	06 27	17 42	06 36	17 33	06 46	17 23
	10	06 02	18 09	06 10	18 01	06 18	17 53	06 27	17 44	06 36	17 35	06 46	17 25
	15	06 02	18 09	06 10	18 02	06 18	17 54	06 26	17 46	06 35	17 37	06 45	17 27
	20	06 03	18 10	06 10	18 03	06 18	17 55	06 26	17 47	06 34	17 39	06 44	17 30
	25	06 03	18 10	06 10	18 03	06 17	17 56	06 25	17 48	06 33	17 40	06 42	17 32
	30	06 03	18 10	06 10	18 03	06 17	17 57	06 24	17 49	06 31	17 42	06 39	17 34
Aug.	4	06 03	18 10	06 09	18 03	06 15	17 57	06 22	17 50	06 29	17 44	06 36	17 37
	9	06 02	18 09	06 08	18 04	06 14	17 58	06 20	17 52	06 26	17 46	06 33	17 39
	14	06 01	18 08	06 06	18 03	06 12	17 58	06 18	17 52	06 23	17 47	06 29	17 41
	19	06 00	18 07	06 05	18 02	06 10	17 58	06 15	17 53	06 19	17 48	06 24	17 43
	24	05 59	18 06	06 03	18 02	06 07	17 58	06 12	17 54	06 16	17 50	06 20	17 45
	29	05 58	18 04	06 01	18 01	06 05	17 58	06 09	17 54	06 12	17 51	06 16	17 47
Sept.	3	05 56	18 03	05 59	18 00	06 02	17 58	06 05	17 55	06 08	17 52	06 11	17 49
	8	05 55	18 01	05 57	17 59	05 59	17 57	06 01	17 55	06 03	17 53	06 06	17 50
	13	05 53	17 59	05 55	17 58	05 56	17 57	05 58	17 55	05 59	17 54	06 00	17 52
	18	05 51	17 58	05 52	17 57	05 53	17 56	05 54	17 55	05 54	17 55	05 54	17 54
	23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
	28	05 48	17 54	05 47	17 55	05 46	17 56	05 45	17 56	05 45	17 57	05 44	17 58
Oct.	3	05 46	17 52	05 45	17 54	05 43	17 55	05 42	17 57	05 40	17 59	05 38	18 00
	8	05 44	17 51	05 42	17 53	05 40	17 55	05 38	17 57	05 36	18 00	05 33	18 02
	13	05 43	17 50	05 40	17 52	05 38	17 55	05 35	17 58	05 32	18 01	05 28	18 04
	18	05 42	17 49	05 38	17 52	05 35	17 55	05 31	17 59	05 28	18 03	05 24	18 07
	23	05 41	17 48	05 37	17 52	05 33	17 56	05 28	18 00	05 24	18 05	05 19	18 10
	28	05 41	17 47	05 36	17 52	05 31	17 57	05 26	18 02	05 21	18 07	05 15	18 13
Nov.	2	05 40	17 47	05 35	17 52	05 30	17 58	05 24	18 03	05 18	18 09	05 11	18 16
	7	05 40	17 47	05 34	17 53	05 29	17 59	05 22	18 05	05 16	18 12	05 08	18 19
	12	05 41	17 48	05 34	17 54	05 28	18 00	05 21	18 07	05 14	18 14	05 06	18 22
	17	05 41	17 48	05 34	17 55	05 27	18 02	05 20	18 10	05 13	18 17	05 04	18 26
	22	05 42	17 50	05 35	17 57	05 28	18 04	05 20	18 12	05 12	18 20	05 02	18 30
	27	05 44	17 51	05 36	17 59	05 28	18 07	05 20	18 15	05 11	18 24	05 01	18 34
Dec.	2	05 46	17 53	05 37	18 01	05 29	18 09	05 20	18 18	05 12	18 27	05 01	18 37
	7	05 48	17 55	05 39	18 03	05 31	18 12	05 21	18 21	05 12	18 30	05 01	18 40
	12	05 50	17 57	05 41	18 05	05 32	18 14	05 23	18 24	05 14	18 33	05 03	18 44
	17	05 52	18 00	05 43	18 08	05 34	18 17	05 25	18 26	05 16	18 36	05 05	18 47
	22	05 54	18 02	05 45	18 11	05 37	18 20	05 28	18 29	05 18	18 39	05 07	18 50
	27	05 57	18 05	05 48	18 14	05 38	18 22	05 30	18 32	05 20	18 41	05 09	18 52
Jan.	1	06 00	18 07	05 51	18 16	05 42	18 24	05 32	18 34	05 23	18 43	05 12	18 54

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		30° S		32° S		34° S		36° S		38° S		40° S	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	05 02	19 04	04 57	19 09	04 52	19 14	04 46	19 20	04 40	19 26	04 34	19 32
	6	05 06	19 05	05 01	19 10	04 56	19 15	04 50	19 21	04 45	19 26	04 39	19 32
	11	05 10	19 05	05 05	19 10	05 00	19 15	04 55	19 20	04 50	19 25	04 44	19 31
	16	05 14	19 05	05 09	19 09	05 04	19 14	04 59	19 19	04 54	19 24	04 49	19 30
	21	05 18	19 04	05 14	19 08	05 09	19 13	05 05	19 17	05 00	19 22	04 55	19 27
	26	05 23	19 02	05 19	19 06	05 15	19 10	05 11	19 14	05 06	19 19	05 01	19 23
	31	05 27	18 59	05 23	19 03	05 20	19 06	05 16	19 10	05 11	19 15	05 07	19 19
Feb.	5	05 31	18 56	05 28	18 59	05 25	19 02	05 21	19 06	05 17	19 10	05 13	19 14
	10	05 36	18 52	05 33	18 55	05 30	18 58	05 26	19 02	05 23	19 05	05 19	19 09
	15	05 40	18 48	05 37	18 51	05 34	18 54	05 31	18 56	05 28	18 59	05 25	19 02
	20	05 44	18 43	05 42	18 45	05 39	18 48	05 37	18 50	05 34	18 53	05 31	18 56
	25	05 48	18 38	05 46	18 40	05 44	18 42	05 42	18 44	05 39	18 47	05 37	18 49
Mar.	2	05 51	18 33	05 49	18 35	05 48	18 36	05 46	18 38	05 45	18 40	05 43	18 41
	7	05 55	18 28	05 54	18 29	05 53	18 30	05 51	18 32	05 50	18 33	05 48	18 34
	12	05 58	18 22	05 57	18 22	05 56	18 23	05 56	18 24	05 55	18 25	05 54	18 26
	17	06 01	18 16	06 01	18 16	06 00	18 17	06 00	18 17	05 59	18 18	05 59	18 18
	22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10
	27	06 07	18 04	06 07	18 04	06 08	18 03	06 08	18 03	06 09	18 02	06 09	18 01
Apr.	1	06 10	17 58	06 11	17 57	06 12	17 56	06 12	17 55	06 13	17 54	06 14	17 53
	6	06 13	17 52	06 14	17 51	06 15	17 50	06 17	17 48	06 18	17 47	06 19	17 46
	11	06 16	17 46	06 18	17 44	06 19	17 43	06 21	17 41	06 22	17 40	06 24	17 38
	16	06 19	17 40	06 21	17 38	06 23	17 37	06 25	17 35	06 27	17 32	06 29	17 30
	21	06 22	17 35	06 24	17 33	06 27	17 30	06 29	17 28	06 32	17 25	06 34	17 23
	26	06 25	17 30	06 28	17 28	06 31	17 25	06 33	17 22	06 36	17 19	06 39	17 16
May	1	06 28	17 26	06 31	17 23	06 34	17 20	06 38	17 16	06 41	17 13	06 44	17 10
	6	06 32	17 21	06 35	17 18	06 38	17 15	06 42	17 11	06 45	17 08	06 49	17 04
	11	06 35	17 18	06 39	17 14	06 42	17 11	06 46	17 07	06 50	17 02	06 54	16 58
	16	06 38	17 15	06 42	17 11	06 46	17 07	06 50	17 03	06 54	16 58	06 59	16 54
	21	06 41	17 12	06 45	17 08	06 49	17 04	06 53	17 00	06 58	16 55	07 03	16 50
	26	06 44	17 10	06 48	17 06	06 53	17 01	06 57	16 56	07 02	16 51	07 07	16 46
	31	06 47	17 08	06 51	17 04	06 56	16 59	07 01	16 54	07 06	16 49	07 11	16 44
June	5	06 49	17 07	06 54	17 03	06 59	16 58	07 04	16 53	07 09	16 48	07 15	16 42
	10	06 52	17 07	06 57	17 02	07 02	16 57	07 07	16 52	07 12	16 47	07 18	16 41
	15	06 54	17 07	06 59	17 02	07 04	16 57	07 09	16 52	07 14	16 47	07 20	16 41
	20	06 55	17 08	07 00	17 03	07 05	16 58	07 10	16 52	07 15	16 47	07 21	16 41
	25	06 56	17 09	07 01	17 04	07 06	16 59	07 11	16 54	07 17	16 48	07 23	16 42
	30	06 56	17 11	07 01	17 06	07 06	17 01	07 12	16 56	07 17	16 50	07 22	16 44
July	5	06 56	17 13	07 01	17 08	07 06	17 03	07 11	16 58	07 16	16 53	07 22	16 47
	10	06 56	17 15	07 00	17 10	07 05	17 05	07 10	17 00	07 15	16 55	07 21	16 50
	15	06 54	17 18	06 59	17 13	07 04	17 08	07 09	17 03	07 14	16 58	07 19	16 53
	20	06 53	17 20	06 57	17 16	07 01	17 12	07 06	17 07	07 11	17 02	07 16	16 57
	25	06 50	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 06	07 12	17 01
	30	06 47	17 26	06 51	17 22	06 55	17 19	06 59	17 15	07 04	17 10	07 08	17 06
Aug.	4	06 44	17 29	06 48	17 25	06 51	17 22	06 55	17 18	06 59	17 14	07 03	17 10
	9	06 40	17 32	06 43	17 29	06 46	17 26	06 50	17 22	06 53	17 19	06 57	17 15
	14	06 35	17 35	06 38	17 32	06 41	17 29	06 44	17 26	06 47	17 23	06 51	17 20
	19	06 30	17 38	06 33	17 35	06 36	17 32	06 38	17 30	06 41	17 27	06 44	17 24
	24	06 25	17 40	06 27	17 38	06 30	17 36	06 32	17 34	06 35	17 31	06 37	17 29
	29	06 20	17 43	06 22	17 41	06 23	17 40	06 25	17 38	06 27	17 36	06 29	17 34
Sept.	3	06 14	17 46	06 16	17 44	06 17	17 43	06 19	17 41	06 20	17 40	06 22	17 38
	8	06 08	17 48	06 09	17 47	06 10	17 46	06 11	17 45	06 12	17 44	06 13	17 43
	13	06 02	17 51	06 03	17 50	06 04	17 49	06 04	17 49	06 05	17 48	06 06	17 47
	18	05 55	17 54	05 55	17 54	05 56	17 53	05 56	17 53	05 57	17 52	05 57	17 52
	23	05 49	17 56	05 49	17 56	05 49	17 57	05 49	17 57	05 49	17 57	05 49	17 57
	28	05 43	17 59	05 43	17 59	05 42	18 00	05 42	18 00	05 41	18 01	05 41	18 02
Oct.	3	05 37	18 02	05 36	18 03	05 35	18 04	05 35	18 05	05 34	18 06	05 33	18 07
	8	05 31	18 05	05 30	18 06	05 29	18 07	05 27	18 09	05 26	18 10	05 24	18 12
	13	05 25	18 08	05 23	18 10	05 22	18 11	05 20	18 13	05 19	18 15	05 17	18 17
	18	05 20	18 11	05 18	18 13	05 16	18 15	05 14	18 17	05 11	18 20	05 09	18 22
	23	05 14	18 15	05 12	18 17	05 09	18 20	05 07	18 22	05 04	18 25	05 02	18 28
	28	05 10	18 19	05 07	18 21	05 04	18 24	05 01	18 27	04 58	18 30	04 55	18 33
Nov.	2	05 05	18 23	05 02	18 26	04 59	18 29	04 55	18 32	04 52	18 35	04 49	18 39
	7	05 01	18 26	04 58	18 30	04 55	18 33	04 51	18 37	04 47	18 41	04 43	18 45
	12	04 58	18 31	04 54	18 35	04 51	18 38	04 47	18 42	04 42	18 47	04 38	18 51
	17	04 55	18 35	04 51	18 39	04 47	18 43	04 43	18 47	04 38	18 52	04 34	18 57
	22	04 53	18 39	04 49	18 43	04 44	18 48	04 40	18 52	04 35	18 57	04 30	19 02
	27	04 52	18 43	04 47	18 48	04 42	18 53	04 37	18 58	04 32	19 03	04 27	19 08
Dec.	2	04 51	18 47	04 46	18 52	04 41	18 57	04 36	19 02	04 31	19 07	04 25	19 13
	7	04 51	18 51	04 46	18 56	04 41	19 01	04 36	19 07	04 31	19 12	04 25	19 18
	12	04 52	18 55	04 47	19 00	04 42	19 05	04 36	19 11	04 31	19 16	04 25	19 22
	17	04 54	18 58	04 49	19 03	04 44	19 08	04 38	19 14	04 32	19 20	04 26	19 26
	22	04 56	19 01	04 51	19 06	04 46	19 11	04 40	19 17	04 34	19 23	04 28	19 29
	27	04 58	19 03	04 53	19 08	04 48	19 13	04 42	19 19	04 36	19 25	04 30	19 31
Jan.	1	05 02	19 04	04 57	19 09	04 52	19 14	04 46	19 20	04 40	19 26	04 34	19 32

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		42° S		44° S		46° S		48° S		50° S		52° S	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	04 27	19 39	04 20	19 46	04 13	19 53	04 04	20 02	03 55	20 11	03 44	20 22
	6	04 32	19 39	04 25	19 46	04 17	19 53	04 08	20 02	04 00	20 10	03 50	20 21
	11	04 37	19 38	04 30	19 45	04 23	19 52	04 15	20 00	04 07	20 08	03 57	20 18
	16	04 43	19 36	04 36	19 42	04 29	19 49	04 22	19 56	04 14	20 04	04 05	20 14
	21	04 49	19 33	04 43	19 39	04 36	19 46	04 29	19 53	04 22	20 00	04 13	20 08
	26	04 55	19 29	04 50	19 34	04 44	19 40	04 37	19 47	04 30	19 54	04 22	20 02
	31	05 02	19 24	04 57	19 29	04 51	19 35	04 45	19 41	04 39	19 47	04 31	19 54
Feb.	5	05 09	19 19	05 04	19 24	04 59	19 29	04 53	19 34	04 47	19 39	04 41	19 46
	10	05 15	19 13	05 11	19 17	05 06	19 21	05 01	19 26	04 56	19 31	04 51	19 37
	15	05 21	19 06	05 18	19 09	05 14	19 13	05 09	19 18	05 05	19 22	05 00	19 27
	20	05 28	18 59	05 25	19 02	05 21	19 05	05 18	19 09	05 14	19 13	05 09	19 17
	25	05 34	18 51	05 31	18 54	05 29	18 57	05 26	19 00	05 23	19 03	05 19	19 06
Mar.	2	05 41	18 43	05 38	18 45	05 36	18 47	05 33	18 50	05 31	18 52	05 28	18 55
	7	05 46	18 36	05 45	18 37	05 43	18 39	05 41	18 40	05 39	18 42	05 37	18 44
	12	05 53	18 27	05 52	18 28	05 50	18 29	05 49	18 30	05 48	18 31	05 46	18 33
	17	05 58	18 18	05 57	18 19	05 57	18 19	05 56	18 20	05 56	18 21	05 55	18 21
	22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 10
	27	06 09	18 01	06 10	18 00	06 10	18 00	06 11	17 59	06 12	17 59	06 12	17 58
Apr.	1	06 15	17 52	06 16	17 51	06 17	17 50	06 18	17 49	06 19	17 48	06 21	17 47
	6	06 21	17 44	06 22	17 43	06 24	17 41	06 25	17 39	06 27	17 37	06 29	17 35
	11	06 26	17 36	06 28	17 34	06 30	17 32	06 33	17 29	06 35	17 27	06 38	17 24
	16	06 32	17 28	06 35	17 25	06 37	17 23	06 40	17 20	06 43	17 17	06 46	17 13
	21	06 37	17 20	06 40	17 17	06 43	17 14	06 46	17 11	06 50	17 07	06 54	17 03
	26	06 43	17 13	06 46	17 10	06 50	17 06	06 54	17 01	06 58	16 57	07 03	16 52
May	1	06 48	17 06	06 52	17 02	06 56	16 58	07 01	16 53	07 05	16 48	07 11	16 43
	6	06 53	17 00	06 58	16 55	07 03	16 50	07 08	16 45	07 13	16 40	07 19	16 34
	11	06 59	16 54	07 04	16 49	07 09	16 44	07 14	16 38	07 20	16 32	07 27	16 25
	16	07 04	16 49	07 09	16 44	07 14	16 38	07 21	16 31	07 27	16 25	07 34	16 18
	21	07 09	16 44	07 14	16 39	07 20	16 33	07 27	16 26	07 34	16 19	07 41	16 11
	26	07 13	16 40	07 19	16 35	07 26	16 28	07 33	16 21	07 40	16 14	07 48	16 05
	31	07 17	16 38	07 23	16 31	07 30	16 24	07 37	16 17	07 45	16 10	07 54	16 01
June	5	07 21	16 36	07 28	16 29	07 35	16 22	07 42	16 14	07 50	16 06	08 00	15 57
	10	07 24	16 35	07 31	16 28	07 38	16 21	07 46	16 12	07 54	16 04	08 04	15 55
	15	07 27	16 34	07 34	16 27	07 41	16 20	07 49	16 11	07 57	16 03	08 07	15 54
	20	07 28	16 34	07 35	16 27	07 42	16 20	07 51	16 12	07 59	16 04	08 09	15 54
	25	07 29	16 36	07 36	16 29	07 43	16 22	07 52	16 13	08 00	16 05	08 10	15 55
	30	07 29	16 38	07 36	16 31	07 43	16 24	07 52	16 15	08 00	16 07	08 10	15 58
July	5	07 29	16 41	07 36	16 34	07 43	16 27	07 51	16 19	07 59	16 11	08 08	16 01
	10	07 27	16 44	07 34	16 37	07 41	16 30	07 48	16 23	07 56	16 15	08 05	16 06
	15	07 25	16 47	07 31	16 41	07 38	16 34	07 45	16 27	07 52	16 20	08 01	16 11
	20	07 22	16 51	07 27	16 46	07 34	16 40	07 41	16 33	07 48	16 26	07 56	16 17
	25	07 18	16 56	07 23	16 51	07 29	16 45	07 36	16 38	07 42	16 31	07 50	16 24
	30	07 13	17 01	07 18	16 56	07 23	16 50	07 30	16 44	07 36	16 38	07 43	16 31
Aug.	4	07 07	17 06	07 12	17 01	07 17	16 56	07 22	16 51	07 28	16 45	07 35	16 38
	9	07 01	17 11	07 05	17 07	07 10	17 02	07 15	16 57	07 20	16 52	07 26	16 46
	14	06 55	17 16	06 58	17 12	07 02	17 08	07 07	17 03	07 11	16 59	07 16	16 54
	19	06 47	17 21	06 50	17 18	06 54	17 14	06 58	17 10	07 02	17 06	07 07	17 02
	24	06 40	17 26	06 43	17 23	06 46	17 20	06 49	17 17	06 52	17 14	06 56	17 10
	29	06 31	17 32	06 34	17 29	06 36	17 27	06 39	17 24	06 42	17 21	06 46	17 18
Sept.	3	06 24	17 36	06 26	17 35	06 28	17 33	06 30	17 30	06 32	17 28	06 35	17 26
	8	06 15	17 42	06 16	17 41	06 18	17 39	06 19	17 38	06 21	17 36	06 23	17 34
	13	06 07	17 46	06 08	17 45	06 08	17 45	06 09	17 44	06 10	17 43	06 12	17 42
	18	05 57	17 52	05 58	17 51	05 58	17 51	05 59	17 50	05 59	17 50	06 00	17 50
	23	05 49	17 57	05 49	17 57	05 49	17 57	05 49	17 58	05 49	17 58	05 48	17 58
	28	05 40	18 02	05 39	18 03	05 39	18 03	05 38	18 04	05 37	18 05	05 37	18 06
Oct.	3	05 32	18 08	05 31	18 09	05 29	18 11	05 28	18 12	05 26	18 13	05 25	18 15
	8	05 22	18 14	05 21	18 15	05 19	18 17	05 18	18 19	05 16	18 21	05 13	18 23
	13	05 15	18 19	05 12	18 21	05 10	18 23	05 07	18 26	05 05	18 29	05 02	18 32
	18	05 07	18 25	05 04	18 28	05 01	18 31	04 58	18 34	04 55	18 37	04 51	18 41
	23	04 59	18 31	04 56	18 34	04 52	18 38	04 48	18 41	04 44	18 45	04 40	18 50
	28	04 51	18 37	04 48	18 40	04 44	18 44	04 39	18 49	04 35	18 54	04 30	18 59
Nov.	2	04 45	18 43	04 40	18 48	04 36	18 52	04 31	18 57	04 26	19 02	04 20	19 08
	7	04 39	18 50	04 34	18 55	04 29	19 00	04 24	19 05	04 18	19 11	04 11	19 17
	12	04 33	18 56	04 28	19 01	04 22	19 07	04 16	19 13	04 10	19 19	04 03	19 26
	17	04 28	19 03	04 23	19 08	04 17	19 14	04 10	19 21	04 03	19 28	03 55	19 36
	22	04 24	19 08	04 18	19 14	04 11	19 21	04 04	19 28	03 57	19 36	03 48	19 44
	27	04 21	19 14	04 15	19 21	04 08	19 28	04 00	19 35	03 52	19 43	03 43	19 53
Dec.	2	04 19	19 20	04 12	19 27	04 05	19 34	03 56	19 42	03 48	19 50	03 39	20 00
	7	04 18	19 25	04 11	19 32	04 03	19 39	03 54	19 48	03 46	19 57	03 36	20 07
	12	04 18	19 29	04 11	19 36	04 03	19 44	03 54	19 53	03 45	20 02	03 34	20 13
	17	04 19	19 33	04 12	19 40	04 03	19 48	03 54	19 57	03 45	20 06	03 34	20 17
	22	04 21	19 36	04 14	19 43	04 05	19 51	03 56	20 00	03 47	20 09	03 36	20 20
	27	04 23	19 38	04 16	19 45	04 08	19 53	03 59	20 02	03 50	20 11	03 39	20 22
Jan.	1	04 27	19 39	04 20	19 46	04 12	19 54	04 03	20 03	03 54	20 12	03 44	20 22

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 4.-SUNRISE AND SUNSET, 1987

Date		54° S		56° S		58° S		60° S	
		Rise	Set	Rise	Set	Rise	Set	Rise	Set
		h m	h m	h m	h m	h m	h m	h m	h m
Jan.	1	03 32	20 34	03 18	20 48	03 02	21 04	02 42	21 24
	6	03 38	20 32	03 25	20 46	03 09	21 01	02 50	21 20
	11	03 46	20 29	03 33	20 41	03 18	20 56	03 01	21 13
	16	03 54	20 24	03 42	20 36	03 28	20 49	03 12	21 05
	21	04 03	20 18	03 52	20 29	03 39	20 41	03 25	20 56
	26	04 13	20 10	04 03	20 20	03 52	20 32	03 38	20 45
	31	04 23	20 02	04 14	20 11	04 04	20 21	03 52	20 33
Feb.	5	04 34	19 53	04 25	20 01	04 16	20 10	04 05	20 21
	10	04 44	19 43	04 37	19 50	04 29	19 58	04 19	20 08
	15	04 54	19 33	04 48	19 39	04 41	19 46	04 33	19 54
	20	05 05	19 22	04 59	19 27	04 53	19 33	04 46	19 40
	25	05 15	19 10	05 10	19 14	05 05	19 19	05 00	19 25
Mar.	2	05 25	18 58	05 22	19 02	05 18	19 06	05 13	19 10
	7	05 35	18 47	05 32	18 49	05 29	18 52	05 26	18 56
	12	05 44	18 34	05 43	18 36	05 41	16 38	05 38	18 40
	17	05 54	18 22	05 53	18 23	05 52	18 24	05 50	18 25
	22	06 04	18 10	06 04	18 10	06 03	18 10	06 03	18 10
	27	06 13	17 57	06 14	17 57	06 14	17 56	06 15	17 55
Apr.	1	06 22	17 45	06 24	17 43	06 25	17 42	06 27	17 40
	6	06 32	17 33	06 34	17 31	06 37	17 28	06 39	17 25
	11	06 41	17 21	06 44	17 18	06 47	17 14	06 51	17 10
	16	06 50	17 09	06 54	17 05	06 59	17 01	07 04	16 55
	21	06 59	16 58	07 04	16 53	07 09	16 48	07 15	16 42
	26	07 08	16 47	07 14	16 41	07 20	16 35	07 27	16 27
May	1	07 17	16 37	07 23	16 30	07 31	16 23	07 39	16 14
	6	07 26	16 27	07 33	16 19	07 42	16 11	07 51	16 01
	11	07 34	16 18	07 43	16 10	07 52	16 00	08 03	15 49
	16	07 42	16 10	07 52	16 01	08 02	15 50	08 14	15 38
	21	07 50	16 02	08 00	15 52	08 11	15 41	08 24	15 28
	26	07 58	15 56	08 08	15 45	08 20	15 33	08 34	15 19
	31	08 04	15 51	08 15	15 39	08 28	15 26	08 44	15 11
June	5	08 10	15 47	08 22	15 35	08 35	15 21	08 52	15 05
	10	08 15	15 44	08 27	15 32	08 41	15 17	08 58	15 01
	15	08 18	15 43	08 31	15 30	08 45	15 15	09 03	14 58
	20	08 20	15 43	08 33	15 30	08 48	15 15	09 05	14 58
	25	08 21	15 44	08 34	15 31	08 48	15 17	09 06	14 59
	30	08 21	15 47	08 33	15 34	08 48	15 20	09 05	15 03
July	5	08 19	15 51	08 31	15 39	08 45	15 25	09 01	15 08
	10	08 15	15 55	08 27	15 44	08 41	15 30	08 56	15 15
	15	08 11	16 01	08 22	15 50	08 35	15 38	08 49	15 23
	20	08 05	16 08	08 15	15 58	08 27	15 46	08 41	15 32
	25	07 58	16 15	08 08	16 06	08 19	15 55	08 32	15 42
	30	07 51	16 23	07 59	16 14	08 10	16 04	08 21	15 53
Aug.	4	07 42	16 31	07 50	16 23	07 59	16 14	08 10	16 04
	9	07 32	16 40	07 40	16 32	07 48	16 24	07 57	16 15
	14	07 22	16 48	07 29	16 42	07 36	16 35	07 44	16 27
	19	07 12	16 57	07 17	16 51	07 23	16 45	07 30	16 38
	24	07 00	17 05	07 05	17 01	07 10	16 56	07 16	16 50
	29	06 49	17 14	06 53	17 10	06 57	17 06	07 02	17 01
Sept.	3	06 38	17 23	06 41	17 20	06 44	17 16	06 48	17 13
	8	06 25	17 32	06 27	17 30	06 30	17 27	06 32	17 25
	13	06 13	17 40	06 14	17 39	06 16	17 38	06 18	17 36
	18	06 00	17 49	06 01	17 49	06 02	17 48	06 02	17 48
	23	05 48	17 58	05 48	17 58	05 48	17 59	05 48	17 59
	28	05 36	18 07	05 35	18 08	05 33	18 10	05 32	18 11
Oct.	3	05 23	18 17	05 21	18 19	05 19	18 21	05 17	18 23
	8	05 11	18 26	05 08	18 29	05 06	18 32	05 02	18 35
	13	04 59	18 35	04 55	18 39	04 51	18 43	04 47	18 48
	18	04 47	18 45	04 43	18 49	04 38	18 54	04 32	19 00
	23	04 35	18 55	04 30	19 00	04 24	19 06	04 17	19 13
	28	04 24	19 04	04 18	19 11	04 11	19 18	04 03	19 26
Nov.	2	04 14	19 15	04 06	19 22	03 58	19 30	03 49	19 40
	7	04 04	19 25	03 56	19 33	03 47	19 42	03 36	19 53
	12	03 55	19 35	03 46	19 44	03 35	19 54	03 23	20 07
	17	03 46	19 45	03 36	19 55	03 25	20 06	03 11	20 20
	22	03 39	19 54	03 28	20 05	03 15	20 18	03 01	20 33
	27	03 33	20 03	03 21	20 15	03 07	20 29	02 51	20 45
Dec.	2	03 28	20 11	03 15	20 24	03 00	20 39	02 43	20 56
	7	03 24	20 19	03 11	20 32	02 56	20 47	02 37	21 06
	12	03 22	20 25	03 09	20 39	02 52	20 55	02 33	21 15
	17	03 22	20 29	03 08	20 44	02 51	21 00	02 31	21 21
	22	03 24	20 33	03 10	20 47	02 53	21 04	02 32	21 24
	27	03 27	20 34	03 13	20 49	02 56	21 05	02 35	21 25
Jan.	1	03 32	20 34	03 18	20 48	03 01	21 04	02 42	21 24

Local mean time. To obtain standard time of rise or set, see table 5.

TABLE 5.—REDUCTION OF LOCAL MEAN TIME TO STANDARD TIME

Difference of longitude between local and standard meridian	*Correction to local mean time to obtain standard time*	*Difference of longitude between local and standard meridian*	*Correction to local mean time to obtain standard time*	*Difference of longitude between local and standard meridian*	*Correction to local mean time to obtain standard time*
° ′ ° ′	*Minutes*	° ′ ° ′	*Minutes*	°	*Hours*
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	41	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15°, use the first part of the table. For greater differences use both parts thus: 47°23′ is equivalent to 45° + 2°23′, the correction for 45° is 3 hours, the correction for 2°23′ is 10 minutes; therefore the total correction for the difference in longitude 47°23′ is 3 hours and 10 minutes.

TABLE 6.—MOONRISE AND MOONSET

EXPLANATION OF TABLE

This table gives the time of rising and setting of the Moon's upper limb for every day in the year, at each of the following places:

Panama Canal
Los Angeles, California
San Francisco, California
Seattle, Washington
Anchorage, Alaska
Honolulu, Hawaii

All of table 6 was supplied by the Nautical Almanac Office of the United States Naval Observatory. For the Panama Canal the times were computed for a point about midway between the two ends and are applicable to the entire Canal without the error exceeding a minute or two.

TABLE 6-MOONRISE AND MOONSET, 1987

PANAMA CANAL

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0810	2006	0915	2133	0747	2009	0827	2120	0843	2149	1002	2255	1
2	0907	2107	0956	2222	0828	2059	0913	2213	0935	2241	1051	2336	2
3	0957	2203	1036	2311	0909	2149	1001	2306	1027	2330	1137	....	3
4	1041	2255	1116	....	0951	2240	1052	2359	1119	....	1223	0015	4
5	1122	2343	1158	0000	1035	2331	1144	....	1209	0017	1309	0053	5
6	1202	....	1242	0049	1121	....	1236	0049	1257	0100	1355	0130	6
7	1241	0031	1329	0140	1210	0023	1327	0138	1344	0140	1444	0209	7
8	1320	0118	1418	0232	1301	0116	1417	0223	1431	0219	1537	0251	8
9	1402	0206	1509	0324	1353	0208	1506	0305	1518	0257	1635	0338	9
10	1446	0255	1601	0415	1445	0257	1553	0346	1606	0336	1738	0431	10
11	1533	0346	1653	0504	1536	0345	1640	0425	1658	0417	1845	0530	11
12	1623	0437	1743	0550	1626	0429	1728	0504	1753	0502	1953	0635	12
13	1715	0529	1832	0633	1714	0511	1818	0544	1854	0552	2057	0743	13
14	1807	0619	1920	0714	1801	0550	1911	0626	1959	0647	2155	0850	14
15	1858	0707	2006	0753	1849	0629	2008	0712	2105	0749	2247	0953	15
16	1948	0752	2053	0831	1937	0708	2109	0803	2210	0854	2333	1051	16
17	2036	0835	2141	0909	2027	0748	2213	0900	2309	1000	....	1144	17
18	2122	0914	2231	0950	2120	0831	2317	1001	....	1103	0016	1234	18
19	2208	0953	2324	1033	2217	0918	....	1105	0003	1202	0056	1323	19
20	2255	1030	....	1120	2317	1010	0018	1209	0051	1257	0136	1411	20
21	2343	1109	0022	1214	....	1107	0115	1309	0135	1348	0217	1500	21
22	....	1150	0123	1313	0020	1208	0206	1406	0216	1437	0259	1551	22
23	0034	1235	0227	1416	0123	1312	0253	1500	0256	1525	0344	1643	23
24	0130	1326	0331	1522	0223	1415	0336	1551	0336	1614	0432	1736	24
25	0231	1423	0432	1626	0319	1515	0416	1640	0417	1704	0522	1829	25
26	0336	1526	0527	1727	0409	1612	0457	1729	0500	1755	0614	1920	26
27	0443	1634	0618	1825	0456	1706	0538	1819	0547	1848	0706	2008	27
28	0548	1741	0704	1918	0539	1757	0620	1910	0636	1941	0757	2053	28
29	0648	1846	....	....	0620	1848	0705	2002	0727	2034	0846	2135	29
30	0742	1946	....	....	0701	1938	0753	2056	0820	2124	0934	2214	30
31	0831	2041	....	....	0743	2028	....	....	0912	2212	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1019	2251	1119	2323	1256	....	1352	0042	1504	0230	1508	0259	1
2	1104	2328	1209	....	1359	0044	1448	0145	1547	0322	1552	0350	2
3	1149	....	1304	0007	1502	0148	1538	0246	1629	0413	1638	0442	3
4	1235	0005	1404	0058	1602	0253	1625	0343	1712	0505	1728	0537	4
5	1325	0044	1509	0155	1658	0358	1709	0438	1758	0557	1820	0632	5
6	1419	0127	1615	0258	1748	0459	1752	0531	1846	0652	1914	0728	6
7	1518	0216	1719	0405	1835	0557	1836	0624	1937	0747	2008	0821	7
8	1622	0311	1818	0513	1919	0652	1920	0716	2030	0843	2100	0911	8
9	1730	0413	1912	0617	2002	0745	2007	0810	2124	0938	2150	0956	9
10	1836	0520	2001	0718	2046	0838	2057	0905	2217	1030	2237	1039	10
11	1939	0629	2046	0814	2130	0930	2148	1001	2308	1118	2322	1118	11
12	2035	0735	2129	0907	2218	1024	2241	1056	2357	1202	....	1155	12
13	2126	0837	2211	0959	2307	1118	2335	1149	....	1243	0006	1231	13
14	2211	0934	2254	1050	2358	1212	....	1238	0043	1321	0050	1307	14
15	2254	1028	2338	1141	....	1306	0026	1325	0128	1358	0135	1345	15
16	2334	1118	....	1234	0051	1357	0116	1408	0213	1435	0223	1426	16
17	....	1208	0025	1327	0143	1445	0204	1448	0258	1513	0314	1512	17
18	0015	1257	0114	1420	0234	1530	0251	1526	0345	1553	0411	1604	18
19	0058	1348	0205	1512	0323	1612	0336	1603	0436	1637	0513	1703	19
20	0142	1439	0258	1602	0411	1651	0421	1640	0530	1726	0618	1807	20
21	0229	1532	0349	1649	0457	1728	0507	1719	0629	1821	0724	1914	21
22	0319	1625	0440	1733	0542	1805	0556	1800	0733	1922	0826	2020	22
23	0410	1716	0528	1814	0627	1843	0647	1846	0837	2026	0924	2123	23
24	0502	1805	0615	1852	0714	1922	0743	1936	0940	2131	1015	2220	24
25	0554	1851	0700	1929	0802	2004	0843	2032	1039	2233	1101	2314	25
26	0643	1934	0745	2006	0854	2050	0945	2133	1131	2332	1145	....	26
27	0731	2014	0830	2043	0950	2141	1047	2236	1219	....	1226	0006	27
28	0817	2051	0916	2122	1049	2238	1147	2339	1303	0026	1308	0056	28
29	0902	2128	1005	2205	1151	2339	1243	....	1345	0118	1350	0147	29
30	0946	2204	1058	2252	1253	....	1334	0039	1426	0209	1435	0238	30
31	1031	2242	1155	2345	....	....	1421	0136	....	....	1523	0331	31

Time meridian 75° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1987

LOS ANGELES, CALIF.

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0847	1855	0901	2112	0726	1956	0719	2152	0715	2237	0849	2320	1
2	0930	2009	0928	2215	0753	2100	0755	2254	0806	2327	0948	2350	2
3	1005	2119	0955	2317	0820	2203	0836	2353	0901	....	1046	....	3
4	1035	2225	1022	....	0850	2306	0923	....	0959	0011	1144	0016	4
5	1102	2328	1052	0018	0923	....	1015	0047	1059	0048	1243	0041	5
6	1128	....	1126	0119	1000	0008	1112	0134	1158	0121	1343	0106	6
7	1154	0028	1205	0219	1043	0108	1211	0215	1258	0149	1447	0132	7
8	1222	0128	1250	0317	1132	0204	1311	0251	1357	0216	1554	0201	8
9	1253	0228	1341	0411	1226	0255	1412	0322	1458	0241	1706	0234	9
10	1328	0328	1436	0500	1324	0339	1512	0349	1601	0307	1821	0315	10
11	1408	0427	1535	0542	1424	0418	1613	0416	1707	0334	1935	0406	11
12	1455	0523	1636	0619	1525	0452	1715	0441	1818	0405	2042	0507	12
13	1548	0616	1736	0651	1626	0522	1820	0507	1931	0442	2138	0619	13
14	1645	0703	1836	0720	1726	0549	1927	0536	2046	0527	2224	0735	14
15	1744	0743	1936	0746	1827	0614	2038	0609	2155	0622	2301	0850	15
16	1844	0818	2036	0811	1929	0640	2151	0648	2256	0727	2333	1002	16
17	1944	0849	2138	0837	2034	0707	2302	0736	2346	0838	....	1109	17
18	2043	0916	2242	0904	2141	0736	....	0833	....	0952	0001	1214	18
19	2142	0942	2349	0934	2251	0810	0006	0938	0027	1103	0027	1316	19
20	2242	1007	....	1009	....	0851	0102	1049	0101	1212	0054	1418	20
21	2344	1033	0059	1052	0002	0940	0148	1201	0130	1317	0122	1520	21
22	....	1101	0210	1145	0110	1039	0226	1311	0157	1420	0152	1622	22
23	0050	1133	0318	1248	0211	1146	0258	1419	0223	1522	0227	1723	23
24	0159	1212	0418	1400	0304	1258	0327	1524	0250	1624	0308	1822	24
25	0312	1300	0509	1515	0348	1411	0353	1628	0319	1727	0354	1916	25
26	0425	1359	0551	1629	0424	1522	0420	1731	0351	1829	0446	2004	26
27	0533	1508	0627	1741	0456	1630	0447	1834	0428	1931	0543	2045	27
28	0631	1624	0657	1850	0525	1736	0518	1937	0510	2028	0641	2121	28
29	0719	1741	....	....	0552	1841	0552	2040	0559	2121	0740	2152	29
30	0759	1855	....	....	0619	1945	0630	2141	0652	2207	0839	2219	30
31	0832	2005	....	....	0648	2049	....	....	0750	2246	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0936	2244	1124	2229	1344	2316	1432	....	1452	0152	1418	0300	1
2	1033	2308	1229	2301	1450	....	1515	0030	1520	0259	1449	0405	2
3	1132	2333	1337	2340	1548	0020	1551	0144	1548	0405	1525	0511	3
4	1232	2359	1448	....	1637	0132	1622	0256	1617	0511	1606	0616	4
5	1335	....	1559	0029	1719	0248	1651	0406	1650	0618	1653	0718	5
6	1443	0029	1704	0129	1754	0404	1720	0515	1728	0725	1746	0816	6
7	1556	0105	1800	0240	1825	0518	1749	0622	1812	0830	1843	0906	7
8	1709	0150	1847	0357	1853	0628	1820	0730	1902	0931	1943	0949	8
9	1820	0246	1925	0515	1922	0737	1855	0837	1956	1026	2042	1026	9
10	1922	0353	1958	0631	1952	0844	1935	0943	2055	1113	2140	1057	10
11	2014	0508	2028	0742	2024	0950	2021	1046	2154	1154	2237	1124	11
12	2056	0626	2056	0851	2100	1056	2112	1144	2253	1228	2333	1149	12
13	2131	0743	2124	0957	2142	1159	2208	1235	2351	1257	....	1213	13
14	2201	0854	2154	1102	2229	1259	2307	1319	....	1324	0030	1237	14
15	2229	1002	2227	1206	2322	1354	....	1357	0048	1348	0129	1302	15
16	2256	1107	2304	1309	....	1442	0006	1429	0146	1412	0230	1331	16
17	2324	1211	2347	1411	0019	1523	0105	1457	0244	1437	0336	1404	17
18	2354	1314	....	1508	0118	1558	0203	1523	0345	1504	0445	1446	18
19	....	1416	0036	1559	0217	1628	0301	1547	0450	1535	0558	1537	19
20	0028	1518	0130	1645	0316	1656	0400	1612	0558	1613	0708	1639	20
21	0107	1617	0228	1724	0414	1721	0500	1637	0710	1658	0811	1751	21
22	0151	1712	0327	1757	0512	1745	0602	1706	0821	1754	0905	1907	22
23	0241	1802	0426	1826	0611	1809	0708	1739	0927	1859	0949	2022	23
24	0337	1845	0525	1852	0711	1835	0817	1818	1025	2011	1026	2135	24
25	0435	1922	0622	1917	0814	1905	0927	1906	1113	2124	1057	2243	25
26	0534	1954	0720	1941	0919	1939	1035	2004	1152	2236	1126	2350	26
27	0633	2022	0818	2005	1027	2020	1136	2110	1226	2345	1153	....	27
28	0731	2048	0918	2032	1136	2110	1230	2221	1255	....	1221	0054	28
29	0828	2112	1021	2102	1242	2210	1314	2333	1323	0051	1251	0158	29
30	0925	2136	1127	2138	1341	2318	1351	....	1350	0156	1324	0303	30
31	1023	2201	1235	2222	....	....	1423	0044	....	....	1403	0407	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1987

SAN FRANCISCO, CALIF.

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0914	1904	0919	2129	0743	2014	0729	2219	0721	2306	0857	2345	1
2	0954	2021	0944	2235	0808	2121	0803	2322	0812	2356	0958	....	2
3	1027	2133	1008	2339	0833	2226	0843	....	0908	....	1059	0012	3
4	1055	2241	1034	....	0901	2331	0929	0022	1007	0038	1159	0037	4
5	1119	2346	1102	0042	0932	....	1021	0115	1108	0114	1300	0100	5
6	1143	....	1134	0145	1008	0035	1119	0202	1209	0145	1402	0123	6
7	1207	0049	1212	0247	1049	0136	1220	0242	1311	0211	1508	0147	7
8	1233	0151	1256	0345	1138	0232	1322	0316	1412	0235	1618	0213	8
9	1302	0252	1347	0440	1232	0323	1424	0345	1515	0259	1732	0244	9
10	1336	0354	1443	0528	1332	0407	1526	0410	1621	0322	1849	0323	10
11	1415	0454	1543	0609	1433	0444	1629	0434	1730	0348	2004	0412	11
12	1501	0552	1646	0645	1536	0516	1734	0458	1842	0416	2110	0513	12
13	1554	0644	1748	0715	1639	0544	1841	0522	1958	0451	2205	0625	13
14	1652	0730	1850	0741	1741	0609	1951	0549	2114	0534	2249	0743	14
15	1753	0810	1952	0805	1845	0632	2104	0619	2224	0628	2324	0900	15
16	1854	0843	2054	0829	1949	0656	2219	0656	2324	0732	2353	1015	16
17	1956	0912	2158	0852	2056	0720	2331	0742	....	0845	....	1125	17
18	2057	0937	2305	0917	2205	0748	....	0838	0012	1001	0019	1231	18
19	2158	1001	....	0945	2318	0820	0035	0944	0051	1115	0043	1336	19
20	2301	1024	0014	1018	....	0858	0130	1057	0123	1225	0107	1440	20
21	....	1047	0126	1100	0030	0946	0213	1211	0150	1333	0133	1544	21
22	0005	1113	0239	1151	0139	1045	0249	1323	0215	1438	0202	1648	22
23	0113	1143	0347	1254	0240	1153	0319	1433	0239	1542	0235	1751	23
24	0225	1220	0446	1407	0331	1307	0345	1541	0303	1647	0315	1850	24
25	0340	1306	0535	1524	0413	1421	0410	1646	0330	1751	0400	1945	25
26	0454	1405	0615	1641	0447	1535	0434	1752	0400	1856	0452	2032	26
27	0601	1515	0648	1755	0516	1646	0500	1857	0435	1958	0550	2112	27
28	0658	1632	0717	1906	0543	1754	0528	2003	0517	2057	0649	2146	28
29	0744	1751	....	....	0608	1901	0600	2107	0605	2149	0750	2215	29
30	0821	1908	....	....	0633	2007	0638	2209	0659	2235	0850	2240	30
31	0852	2020	....	....	0659	2113	....	....	0757	2313	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0950	2303	1146	2241	1413	2321	1459	....	1510	0207	1431	0322	1
2	1049	2325	1253	2311	1519	....	1539	0039	1536	0316	1500	0429	2
3	1150	2348	1403	2348	1616	0026	1613	0155	1602	0425	1533	0536	3
4	1252	....	1516	....	1703	0140	1642	0309	1629	0533	1613	0643	4
5	1358	0012	1628	0036	1742	0258	1709	0422	1700	0642	1659	0746	5
6	1508	0040	1732	0135	1815	0416	1735	0533	1736	0751	1752	0844	6
7	1623	0114	1827	0247	1843	0532	1802	0643	1818	0857	1850	0934	7
8	1738	0157	1912	0405	1910	0645	1831	0753	1907	0959	1951	1016	8
9	1849	0252	1948	0526	1936	0756	1904	0902	2003	1054	2052	1051	9
10	1950	0359	2018	0644	2004	0905	1942	1010	2102	1141	2152	1120	10
11	2040	0516	2045	0758	2034	1014	2027	1114	2202	1220	2251	1146	11
12	2120	0636	2111	0909	2108	1122	2118	1213	2303	1252	2349	1209	12
13	2152	0754	2137	1018	2149	1227	2214	1304	....	1320	....	1230	13
14	2220	0909	2205	1125	2235	1328	2314	1347	0003	1344	0048	1252	14
15	2246	1019	2236	1231	2328	1423	....	1423	0103	1407	0149	1316	15
16	2311	1126	2312	1336	....	1510	0015	1453	0202	1429	0252	1342	16
17	2336	1232	2354	1439	0026	1550	0116	1519	0303	1452	0400	1414	17
18	....	1337	....	1536	0126	1623	0216	1543	0406	1517	0512	1453	18
19	0004	1441	0042	1628	0227	1652	0316	1605	0513	1546	0626	1543	19
20	0036	1545	0136	1712	0328	1717	0417	1628	0624	1621	0737	1645	20
21	0114	1645	0235	1750	0428	1740	0519	1651	0737	1705	0840	1758	21
22	0157	1741	0336	1821	0529	1802	0624	1718	0849	1800	0932	1916	22
23	0247	1830	0437	1848	0629	1824	0732	1748	0956	1905	1014	2033	23
24	0343	1912	0537	1913	0732	1848	0843	1826	1053	2018	1048	2148	24
25	0443	1948	0637	1935	0836	1916	0955	1913	1139	2133	1117	2259	25
26	0543	2018	0737	1957	0944	1948	1103	2010	1216	2248	1143	....	26
27	0644	2044	0837	2020	1054	2027	1205	2116	1247	2359	1208	0008	27
28	0744	2108	0939	2044	1204	2116	1257	2229	1314	....	1234	0115	28
29	0843	2130	1044	2112	1311	2215	1339	2343	1339	0108	1302	0221	29
30	0942	2152	1152	2146	1409	2324	1414	....	1404	0215	1334	0328	30
31	1043	2215	1303	2228	....	....	1444	0056	....	....	1410	0434	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1987

SEATTLE, WASH.

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0953	1827	0923	2128	0743	2018	0657	2256	0632	2356	0820	....	1
2	1023	1954	0939	2243	0758	2134	0723	....	0721	....	0929	0016	2
3	1046	2117	0955	2357	0815	2249	0756	0007	0819	0044	1038	0035	3
4	1104	2235	1012	....	0834	....	0838	0111	0924	0122	1147	0052	4
5	1120	2349	1032	0109	0856	0003	0931	0206	1033	0150	1256	0107	5
6	1135	....	1056	0221	0924	0115	1032	0249	1143	0213	1408	0121	6
7	1151	0101	1127	0330	1001	0223	1140	0323	1253	0231	1523	0136	7
8	1208	0212	1206	0434	1047	0323	1250	0349	1404	0247	1643	0153	8
9	1229	0322	1256	0530	1143	0412	1401	0409	1516	0302	1808	0215	9
10	1255	0432	1356	0615	1247	0452	1513	0427	1631	0317	1934	0244	10
11	1328	0539	1502	0651	1357	0522	1625	0442	1750	0333	2054	0324	11
12	1411	0641	1613	0719	1508	0546	1739	0457	1913	0352	2200	0421	12
13	1504	0733	1724	0741	1620	0605	1855	0512	2039	0417	2248	0536	13
14	1606	0816	1835	0759	1732	0621	2016	0529	2203	0450	2322	0702	14
15	1714	0849	1946	0815	1844	0636	2139	0550	2315	0537	2346	0830	15
16	1824	0915	2057	0829	1958	0651	2303	0618	....	0641	....	0955	16
17	1935	0935	2210	0844	2115	0707	....	0655	0011	0759	0006	1115	17
18	2045	0952	2326	0900	2234	0725	0021	0747	0052	0923	0023	1231	18
19	2155	1008	....	0919	2356	0747	0126	0854	0121	1048	0038	1345	19
20	2306	1022	0046	0943	....	0817	0215	1013	0142	1209	0054	1459	20
21	....	1037	0208	1015	0117	0857	0250	1136	0200	1326	0111	1612	21
22	0020	1054	0327	1101	0230	0953	0316	1259	0216	1441	0131	1724	22
23	0138	1115	0438	1203	0330	1104	0336	1419	0231	1554	0156	1835	23
24	0300	1142	0534	1320	0414	1225	0353	1536	0247	1708	0229	1939	24
25	0424	1220	0615	1446	0446	1350	0409	1652	0305	1822	0310	2034	25
26	0544	1313	0645	1614	0511	1514	0424	1807	0327	1935	0402	2119	26
27	0651	1425	0708	1739	0530	1635	0441	1922	0354	2044	0503	2153	27
28	0742	1550	0726	1900	0547	1753	0500	2036	0429	2147	0609	2219	28
29	0819	1719	....	....	0603	1910	0523	2149	0514	2239	0718	2240	29
30	0846	1847	....	....	0619	2026	0553	2257	0609	2320	0827	2257	30
31	0906	2010	....	....	0636	2142	....	....	0712	2351	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0935	2312	1204	2218	1503	2230	1540	2359	1516	0155	1411	0336	1
2	1043	2326	1320	2239	1610	2334	1611	....	1532	0315	1431	0453	2
3	1152	2341	1441	2308	1702	....	1635	0125	1548	0433	1456	0610	3
4	1304	2356	1602	2347	1741	0054	1654	0251	1607	0551	1528	0725	4
5	1419	....	1719	....	1810	0222	1711	0414	1628	0710	1609	0835	5
6	1540	0015	1822	0043	1832	0351	1727	0535	1656	0828	1701	0934	6
7	1704	0039	1910	0157	1850	0518	1744	0656	1731	0943	1803	1022	7
8	1827	0113	1944	0324	1907	0642	1804	0815	1817	1049	1909	1058	8
9	1940	0201	2010	0456	1924	0803	1828	0935	1912	1144	2018	1126	9
10	2037	0307	2030	0625	1942	0923	1858	1051	2016	1227	2127	1147	10
11	2118	0430	2047	0750	2003	1042	1937	1202	2124	1259	2235	1204	11
12	2147	0600	2104	0911	2029	1159	2026	1304	2233	1324	2341	1219	12
13	2209	0730	2120	1030	2102	1312	2125	1353	2342	1344	....	1233	13
14	2227	0855	2139	1147	2144	1418	2231	1431	....	1400	0049	1247	14
15	2243	1016	2201	1303	2237	1513	2340	1459	0050	1414	0158	1302	15
16	2259	1133	2229	1416	2339	1557	....	1522	0158	1428	0311	1319	16
17	2316	1248	2305	1525	....	1631	0049	1539	0308	1443	0429	1341	17
18	2336	1402	2351	1627	0046	1657	0158	1555	0420	1459	0551	1411	18
19	2359	1516	....	1717	0155	1717	0307	1609	0537	1518	0713	1454	19
20	....	1627	0047	1757	0305	1734	0417	1623	0657	1544	0828	1553	20
21	0029	1733	0150	1828	0414	1749	0528	1638	0820	1619	0928	1710	21
22	0108	1831	0258	1852	0523	1802	0642	1655	0939	1708	1013	1836	22
23	0157	1918	0408	1911	0632	1816	0800	1717	1047	1814	1045	2005	23
24	0255	1955	0517	1927	0744	1832	0921	1745	1139	1933	1109	2130	24
25	0400	2024	0626	1941	0858	1850	1041	1824	1216	2058	1128	2252	25
26	0509	2046	0734	1955	1016	1913	1155	1917	1244	2223	1145	....	26
27	0618	2104	0843	2009	1135	1943	1255	2026	1305	2344	1201	0010	27
28	0726	2119	0954	2025	1253	2025	1341	2146	1322	....	1217	0127	28
29	0834	2133	1109	2044	1402	2123	1414	2310	1338	0103	1236	0243	29
30	0942	2147	1227	2108	1458	2236	1439	....	1354	0220	1259	0359	30
31	1052	2202	1346	2142	....	....	1459	0034	....	....	1328	0514	31

Time meridian 120° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1987

ANCHORAGE, ALASKA

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1224	1750	1024	2225	0833	2126	0633	....	0443	0233	0740	0223	1
2	1222	1951	1021	....	0830	2304	0630	0134	0510	0355	0916	0221	2
3	1219	2140	1017	0001	0826	....	0628	0321	0639	0414	1048	0218	3
4	1216	2320	1014	0136	0823	0043	0632	0505	0822	0414	1218	0214	4
5	1212	....	1012	0313	0820	0224	0726	0600	1003	0412	1347	0211	5
6	1209	0054	1009	0452	0818	0408	0907	0605	1139	0409	1519	0208	6
7	1206	0226	1009	0634	0818	0553	1051	0603	1312	0406	1657	0204	7
8	1204	0359	1015	0813	0835	0723	1231	0600	1443	0403	1844	0201	8
9	1201	0534	1055	0920	0955	0750	1407	0557	1616	0359	2043	0157	9
10	1200	0712	1226	0935	1139	0751	1540	0553	1752	0355	2254	0154	10
11	1202	0852	1408	0936	1321	0749	1713	0549	1936	0352	....	0152	11
12	1217	1023	1549	0935	1500	0746	1848	0546	2129	0348	0106	0202	12
13	1316	1112	1726	0932	1636	0743	2028	0542	2335	0345	0136	0353	13
14	1451	1122	1859	0929	1809	0739	2215	0538	....	0341	0135	0609	14
15	1632	1123	2030	0926	1941	0736	....	0534	0150	0339	0132	0815	15
16	1810	1122	2201	0922	2116	0732	0012	0530	0324	0423	0128	1008	16
17	1944	1119	2336	0919	2257	0728	0220	0526	0327	0637	0125	1152	17
18	2115	1116	....	0915	....	0724	0437	0521	0324	0845	0122	1329	18
19	2244	1113	0116	0912	0044	0721	0520	0652	0320	1043	0118	1504	19
20	....	1110	0305	0908	0242	0717	0516	0905	0317	1229	0115	1639	20
21	0016	1107	0505	0905	0450	0712	0512	1108	0313	1409	0112	1817	21
22	0151	1104	0714	0903	----	----	0508	1302	0310	1545	0109	1958	22
23	0335	1100	0849	0943	0707	0919	0504	1447	0306	1719	0107	2143	23
24	0529	1058	0851	1156	0702	1130	0501	1626	0303	1855	0107	2322	24
25	0735	1056	0848	1408	0658	1333	0457	1802	0300	2035	0116	....	25
26	0944	1103	0844	1610	0655	1526	0453	1939	0257	2219	0205	0021	26
27	1034	1234	0841	1802	0651	1711	0450	2118	0255	....	0339	0033	27
28	1036	1450	0837	1946	0647	1851	0447	2301	0256	0004	0520	0033	28
29	1034	1700	....	....	0643	2029	0444	....	0311	0138	0658	0032	29
30	1031	1857	....	....	0640	2208	0442	0047	0419	0218	0830	0029	30
31	1027	2045	....	....	0636	2349	....	....	0559	0223	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1000	0026	1344	2220	1913	2012	1822	2311	1619	0228	1421	0508	1
2	1127	0023	1526	2217	2019	2115	1817	....	1615	0410	1418	0650	2
3	1256	0019	1721	2213	2012	2338	1813	0114	1611	0550	1415	0836	3
4	1428	0016	1928	2210	2008	....	1809	0308	1608	0732	1415	1025	4
5	1607	0012	2143	2210	2003	0150	1805	0456	1605	0917	1420	1212	5
6	1757	0009	2200	....	1959	0354	1802	0640	1602	1107	1459	1326	6
7	2001	0006	2157	0012	1955	0548	1758	0823	1602	1259	1633	1342	7
8	2215	0003	2153	0232	1952	0735	1754	1008	1610	1444	1816	1343	8
9	2343	0003	2150	0443	1948	0919	1751	1156	1716	1530	1955	1341	9
10	2346	0057	2146	0642	1944	1102	1748	1348	1859	1535	2128	1338	10
11	2343	0315	2142	0832	1940	1247	1747	1540	2041	1533	2256	1335	11
12	2340	0530	2138	1015	1937	1435	1807	1712	2218	1531	....	1332	12
13	2337	0733	2135	1156	1934	1626	1942	1726	2350	1528	0023	1329	13
14	2333	0924	2131	1337	1936	1814	2127	1725	....	1524	0149	1325	14
15	2330	1107	2128	1520	2027	1912	2308	1722	0119	1521	0318	1322	15
16	2326	1245	2126	1706	2211	1915	....	1719	0247	1517	0454	1318	16
17	2323	1422	2125	1853	2355	1912	0044	1715	0416	1513	0639	1315	17
18	2320	1601	2138	2028	....	1909	0216	1712	0550	1510	0836	1312	18
19	2318	1742	2255	2059	0135	1905	0345	1708	0732	1506	1045	1310	19
20	2316	1926	....	2100	0309	1902	0514	1704	0923	1503	1240	1332	20
21	2320	2109	0039	2058	0439	1858	0646	1700	1127	1459	1254	1538	21
22	2351	2225	0220	2055	0608	1854	0823	1656	1338	1459	1252	1752	22
23	....	2244	0357	2051	0738	1850	1008	1652	1445	1608	1249	1956	23
24	0119	2246	0529	2048	0910	1846	1203	1648	1444	1821	1246	2150	24
25	0301	2244	0658	2044	1048	1842	1409	1644	1441	2027	1242	2334	25
26	0440	2241	0826	2040	1234	1838	----	----	1438	2223	1239	....	26
27	0615	2238	0955	2037	1431	1833	1639	1835	1434	....	1235	0114	27
28	0745	2235	1127	2033	1640	1827	1634	2046	1431	0011	1232	0253	28
29	0913	2231	1306	2029	----	----	1630	2249	1427	0152	1229	0432	29
30	1040	2228	1455	2025	1827	2059	1626	....	1424	0330	1227	0615	30
31	1209	2224	1655	2020	....	....	1622	0042	....	....	1225	0802	31

Time meridian 135° W. 0000 is midnight. 1200 is noon.

TABLE 6-MOONRISE AND MOONSET, 1987

HONOLULU, HAWAII

Day	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	0900	2010	0939	2157	0808	2037	0828	2208	0837	2243	1002	2337	1
2	0949	2116	1014	2252	0843	2133	0910	2304	0929	2334	1055	....	2
3	1032	2217	1048	2346	0918	2228	0956	....	1022	....	1147	0012	3
4	1109	2315	1123	....	0955	2324	1045	0000	1117	0020	1238	0046	4
5	1144	....	1200	0041	1034	....	1138	0052	1211	0102	1330	0117	5
6	1217	0009	1240	0135	1117	0020	1232	0141	1304	0140	1423	0149	6
7	1250	0102	1324	0230	1204	0116	1327	0226	1356	0214	1519	0223	7
8	1325	0155	1411	0324	1255	0210	1421	0306	1448	0247	1619	0300	8
9	1402	0248	1503	0417	1348	0301	1514	0343	1542	0320	1723	0342	9
10	1443	0342	1557	0507	1443	0348	1607	0417	1637	0353	1832	0430	10
11	1528	0437	1652	0552	1537	0431	1701	0451	1736	0429	1942	0527	11
12	1617	0530	1746	0634	1632	0510	1755	0524	1839	0508	2049	0632	12
13	1709	0622	1840	0712	1725	0546	1852	0558	1946	0553	2149	0742	13
14	1804	0710	1933	0747	1818	0620	1952	0635	2055	0645	2240	0852	14
15	1858	0755	2025	0820	1912	0653	2056	0716	2202	0745	2325	1000	15
16	1952	0835	2118	0852	2006	0726	2202	0803	2304	0851	....	1103	16
17	2045	0911	2212	0925	2103	0800	2309	0857	2359	0959	0004	1202	17
18	2137	0945	2309	1000	2203	0838	....	0957	....	1107	0039	1258	18
19	2229	1018	....	1038	2306	0920	0013	1102	0046	1210	0113	1353	19
20	2322	1050	0009	1121	....	1008	0111	1209	0127	1310	0147	1447	20
21	....	1123	0113	1211	0011	1102	0202	1314	0203	1407	0223	1542	21
22	0017	1159	0219	1309	0116	1204	0246	1416	0238	1502	0300	1638	22
23	0115	1239	0324	1413	0218	1309	0326	1515	0311	1557	0341	1734	23
24	0218	1326	0426	1521	0314	1416	0402	1612	0346	1651	0427	1829	24
25	0324	1420	0521	1630	0404	1522	0436	1707	0422	1747	0516	1922	25
26	0433	1523	0610	1736	0447	1624	0510	1803	0501	1843	0609	2011	26
27	0540	1632	0653	1839	0527	1724	0546	1859	0544	1940	0703	2056	27
28	0641	1743	0732	1939	0603	1821	0623	1955	0630	2035	0757	2136	28
29	0735	1853	....	....	0638	1918	0704	2052	0721	2127	0850	2212	29
30	0821	1958	....	....	0713	2014	0748	2149	0814	2215	0942	2246	30
31	0902	2059	....	....	0749	2111	....	....	0909	2258	....	....	31

Day	JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		Day
	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	Rise h m	Set h m	
1	1032	2317	1154	2329	1352	....	1443	0040	1529	0247	1516	0333	1
2	1122	2349	1251	....	1456	0040	1532	0147	1605	0345	1555	0430	2
3	1213	....	1353	0009	1556	0144	1615	0253	1641	0443	1637	0528	3
4	1306	0020	1458	0056	1651	0253	1655	0357	1719	0541	1724	0628	4
5	1403	0055	1606	0151	1739	0402	1732	0458	1759	0640	1815	0726	5
6	1504	0133	1711	0254	1822	0510	1808	0558	1844	0740	1909	0822	6
7	1609	0217	1811	0404	1901	0614	1846	0657	1932	0840	2004	0913	7
8	1718	0309	1904	0515	1938	0715	1925	0756	2024	0937	2059	0959	8
9	1827	0409	1950	0625	2015	0815	2007	0856	2119	1032	2152	1040	9
10	1931	0517	2031	0731	2052	0914	2053	0955	2214	1121	2244	1117	10
11	2028	0629	2108	0834	2132	1013	2143	1054	2308	1205	2334	1150	11
12	2117	0740	2144	0934	2215	1111	2235	1150	....	1244	....	1222	12
13	2159	0848	2220	1031	2302	1210	2330	1241	0001	1319	0023	1252	13
14	2237	0951	2258	1129	2352	1306	....	1328	0052	1352	0113	1323	14
15	2313	1050	2338	1226	....	1359	0024	1410	0143	1423	0205	1356	15
16	2348	1146	....	1323	0045	1449	0118	1447	0233	1455	0259	1432	16
17	....	1242	0021	1419	0139	1533	0210	1522	0325	1527	0358	1514	17
18	0023	1337	0108	1514	0233	1613	0302	1554	0418	1602	0501	1603	18
19	0100	1433	0159	1605	0327	1649	0353	1626	0515	1641	0607	1700	19
20	0140	1529	0252	1653	0419	1723	0444	1657	0617	1726	0715	1804	20
21	0224	1625	0346	1735	0510	1755	0537	1730	0722	1818	0819	1914	21
22	0313	1718	0440	1814	0601	1826	0632	1807	0829	1918	0917	2023	22
23	0404	1809	0533	1849	0652	1858	0730	1848	0934	2023	1007	2131	23
24	0458	1854	0625	1922	0745	1931	0832	1934	1033	2131	1051	2234	24
25	0552	1936	0716	1953	0840	2008	0936	2028	1126	2238	1130	2334	25
26	0645	2013	0806	2024	0939	2050	1041	2128	1212	2341	1207	....	26
27	0738	2047	0857	2056	1040	2138	1143	2233	1253	....	1242	0032	27
28	0829	2119	0950	2130	1144	2233	1239	2339	1330	0042	1317	0128	28
29	0919	2150	1045	2208	1248	2334	1329	....	1405	0140	1355	0225	29
30	1009	2221	1144	2251	1348	....	1413	0044	1440	0236	1435	0322	30
31	1100	2254	1247	2342	....	....	1453	0147	....	....	1520	0420	31

Time meridian 150° W. 0000 is midnight. 1200 is noon.

TABLE 7.—CONVERSION OF FEET TO METERS

	Tenths of a Foot										
Feet	**0.0**	**0.1**	**0.2**	**0.3**	**0.4**	**0.5**	**0.6**	**0.7**	**0.8**	**0.9**	**Feet**
0	0.00	0.03	0.06	0.09	0.12	0.15	0.18	0.21	0.24	0.27	**0**
1	0.30	0.34	0.37	0.40	0.43	0.46	0.49	0.52	0.55	0.58	**1**
2	0.61	0.64	0.67	0.70	0.73	0.76	0.79	0.82	0.85	0.88	**2**
3	0.91	0.94	0.98	1.01	1.04	1.07	1.10	1.13	1.16	1.19	**3**
4	1.22	1.25	1.28	1.31	1.34	1.37	1.40	1.43	1.46	1.49	**4**
5	1.52	1.55	1.58	1.62	1.65	1.68	1.71	1.74	1.77	1.80	**5**
6	1.83	1.86	1.89	1.92	1.95	1.98	2.01	2.04	2.07	2.10	**6**
7	2.13	2.16	2.19	2.23	2.26	2.29	2.32	2.35	2.38	2.41	**7**
8	2.44	2.47	2.50	2.53	2.56	2.59	2.62	2.65	2.68	2.71	**8**
9	2.74	2.77	2.80	2.83	2.87	2.90	2.93	2.96	2.99	3.02	**9**
10	3.05	3.08	3.11	3.14	3.17	3.20	3.23	3.26	3.29	3.32	**10**
11	3.35	3.38	3.41	3.44	3.47	3.51	3.54	3.57	3.60	3.63	**11**
12	3.66	3.69	3.72	3.75	3.78	3.81	3.84	3.87	3.90	3.93	**12**
13	3.96	3.99	4.02	4.05	4.08	4.11	4.15	4.18	4.21	4.24	**13**
14	4.27	4.30	4.33	4.36	4.39	4.42	4.45	4.48	4.51	4.54	**14**
15	4.57	4.60	4.63	4.66	4.69	4.72	4.75	4.79	4.82	4.85	**15**
16	4.88	4.91	4.94	4.97	5.00	5.03	5.06	5.09	5.12	5.15	**16**
17	5.18	5.21	5.24	5.27	5.30	5.33	5.36	5.39	5.43	5.46	**17**
18	5.49	5.52	5.55	5.58	5.61	5.64	5.67	5.70	5.73	5.76	**18**
19	5.79	5.82	5.85	5.88	5.91	5.94	5.97	6.00	6.04	6.07	**19**
20	6.10	6.13	6.16	6.19	6.22	6.25	6.28	6.31	6.34	6.37	**20**
21	6.40	6.43	6.46	6.49	6.52	6.55	6.58	6.61	6.64	6.68	**21**
22	6.71	6.74	6.77	6.80	6.83	6.86	6.89	6.92	6.95	6.98	**22**
23	7.01	7.04	7.07	7.10	7.13	7.16	7.19	7.22	7.25	7.28	**23**
24	7.32	7.35	7.38	7.41	7.44	7.47	7.50	7.53	7.56	7.59	**24**
25	7.62	7.65	7.68	7.71	7.74	7.77	7.80	7.83	7.86	7.89	**25**
26	7.92	7.96	7.99	8.02	8.05	8.08	8.11	8.14	8.17	8.20	**26**
27	8.23	8.26	8.29	8.32	8.35	8.38	8.41	8.44	8.47	8.50	**27**
28	8.53	8.56	8.60	8.63	8.66	8.69	8.72	8.75	8.78	8.81	**28**
29	8.84	8.87	8.90	8.93	8.96	8.99	9.02	9.05	9.08	9.11	**29**
30	9.14	9.17	9.20	9.24	9.27	9.30	9.33	9.36	9.39	9.42	**30**
31	9.45	9.48	9.51	9.54	9.57	9.60	9.63	9.66	9.69	9.72	**31**
32	9.75	9.78	9.81	9.85	9.88	9.91	9.94	9.97	10.00	10.03	**32**
33	10.06	10.09	10.12	10.15	10.18	10.21	10.24	10.27	10.30	10.33	**33**
34	10.36	10.39	10.42	10.45	10.49	10.52	10.55	10.58	10.61	10.64	**34**
35	10.67	10.70	10.73	10.76	10.79	10.82	10.85	10.88	10.91	10.94	**35**
36	10.97	11.00	11.03	11.06	11.09	11.13	11.16	11.19	11.22	11.25	**36**
37	11.28	11.31	11.34	11.37	11.40	11.43	11.46	11.49	11.52	11.55	**37**
38	11.58	11.61	11.64	11.67	11.70	11.73	11.77	11.80	11.83	11.86	**38**
39	11.89	11.92	11.95	11.98	12.01	12.04	12.07	12.10	12.13	12.16	**39**
40	12.19	12.22	12.25	12.28	12.31	12.34	12.37	12.41	12.44	12.47	**40**
41	12.50	12.53	12.56	12.59	12.62	12.65	12.68	12.71	12.74	12.77	**41**
42	12.80	12.83	12.86	12.89	12.92	12.95	12.98	13.01	13.05	13.08	**42**
43	13.11	13.14	13.17	13.20	13.23	13.26	13.29	13.32	13.35	13.38	**43**
44	13.41	13.44	13.47	13.50	13.53	13.56	13.59	13.62	13.66	13.69	**44**
45	13.72	13.75	13.78	13.81	13.84	13.87	13.90	13.93	13.96	13.99	**45**
46	14.02	14.05	14.08	14.11	14.14	14.17	14.20	14.23	14.26	14.30	**46**
47	14.33	14.36	14.39	14.42	14.45	14.48	14.51	14.54	14.57	14.60	**47**
48	14.63	14.66	14.69	14.72	14.75	14.78	14.81	14.84	14.87	14.90	**48**
49	14.94	14.97	15.00	15.03	15.06	15.09	15.12	15.15	15.18	15.21	**49**
50	15.24	15.27	15.30	15.33	15.36	15.39	15.42	15.45	15.48	15.51	**50**

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.
Tide Tables, East Coast of North and South America (Including Greenland).
Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).
Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).

TIDAL BENCH MARKS

To provide permanent points for the observed heights of the tide and the tidal datum planes determined therefrom, a system of bench marks is established at each tide station. The descriptions and elevations of these bench marks along our coast are compiled, published, and available for distribution. Requests for such bench mark data should specify the coastal locality for which the information is desired.

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.
Tidal Current Tables, Pacific Coast of North America and Asia.

TIDAL CURRENT CHARTS

Each publication consists of a set of 12 charts which depict, by means of arrows and figures, the direction and speed of the tidal current for each hour of the tidal cycle. The charts, which may be used for any year, present a comprehensive view of the tidal current movement in the respective waterways as a whole and also supply a means for readily determining for any time the direction and speed of the current at various localities throughout the water areas covered. The Narragansett Bay tidal current chart is to be used with the annual tide tables. The other charts require the annual tidal current tables.

Tidal Current Charts, Boston Harbor.
Tidal Current Charts, Charleston Harbor, S.C.
Tidal Current Charts, Delaware Bay and River.
Tidal Current Charts, Long Island Sound and Block Island Sound.
Tidal Current Charts, Narragansett Bay.
Tidal Current Charts, Narragansett Bay to Nantucket Sound.
Tidal Current Charts, New York Harbor.
Tidal Current Charts, Puget Sound, Northern Part.
Tidal Current Charts, Puget Sound, Southern Part.
Tidal Current Charts, San Francisco Bay.
Tidal Current Charts, Upper Chesapeake Bay.
Tidal Current Charts, Tampa Bay.

TIDAL CURRENT DIAGRAMS

The tidal current diagrams are a series of 12 monthly diagrams to be used with the tidal current charts to give the user a convenient method to determine the current flow on a particular day.

Tidal Current Diagrams for Long Island Sound and Block Island Sound.
Tidal Current Diagrams for Boston Harbor.
Tidal Current Diagrams for New York Harbor.

GLOSSARY OF TERMS

ANNUAL INEQUALITY—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.

APOGEAN TIDES OR TIDAL CURRENTS—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).

AUTOMATIC TIDE GAGE—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height, versus corresponding time of the tide, is recorded.

BENCH MARK (BM)—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.

CHART DATUM—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.

CURRENT—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.

CURRENT DIFFERENCE—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.

CURRENT ELLIPSE—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.

CURRENT METER—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.

DATUM (vertical)—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.

DAYLIGHT SAVING TIME—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.

DIURNAL—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.

DIURNAL INEQUALITY—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of th day at the times of the tropic tides. Mean and tropic inequalities as defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb;* it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called *second ebb* after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called first flood; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called second flood after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an *agger*.

DURATION OF FLOOD AND DURATION OF EBB—*Duration of flood* is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression *maximum ebb* is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression *maximum flood* is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level.*

HARMONIC ANALYSIS—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.

HARMONIC CONSTANTS—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.

HARMONIC CONSTITUENT—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A\cos(at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide,* is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A speed unit of 1 international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

LOW WATER (LW)—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide,* is discouraged.

LOWER HIGH WATER (LHW)—The lower of the two high waters of any tidal day.

LOWER LOW WATER (LLW)—The lower of the two low waters of any tidal day.

LUNAR DAY—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

LUNAR INTERVAL—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is 0.069 L, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.

LUNICURRENT INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval* and *strength of ebb interval,* which may be abbreviated to *flood interval* and *ebb interval,* respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

LUNITIDAL INTERVAL—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to *high water interval* (HWI). Similarly the mean *low water lunitidal interval* is abbreviated to *low water interval* (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.

MEAN HIGH WATER (MHW)—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN HIGHER HIGH WATER (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

MEAN HIGHER HIGH WATER LINE (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

MEAN LOW WATER (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

MEAN LOW WATER SPRINGS (MLWS)—A tidal datum. Frequently abbreviated *spring low water.* The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).

MEAN LOWER LOW WATER (MLLW)—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

MEAN RANGE OF TIDE (Mn)—The difference in height between mean high water and mean low water.

MEAN RIVER LEVEL—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.

MEAN SEA LEVEL (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.

MEAN TIDE LEVEL (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

MIXED TIDE—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (Np) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called *neap low water* or *low water neaps* (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (Pn) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range. For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables* and *Tidal Current Tables,* and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water* or *mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water* or *mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding the time or height for the subordinate station.

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (Gc), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (Sc) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (Mc) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (TcHHW), *tropic lower high water* (TcLHW), *tropic higher low water* (TcHLW), and *tropic lower low water* (TcLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal;* when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed;* and when there is only one high water and one low water in each tidal day, it is said to be *dirunal.*

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

INDEX TO STATIONS
(Numbers refer to table 2)

[Stations marked with an asterisk (*) are reference stations for which daily predictions are given in table 1. Page numbers of reference stations are given in parentheses.]

No.

A

Aberdeen, Wash * (84) 947
Acajutla, El Salvador 367
Acapulco, Mexico 377
Active Pass, British Columbia 1159
Adak Bight, Alaska 2197
Adak Island, Alaska 2191-2207
Addenbroke Island, British Columbia 1251
Admiralty Head, Wash 983
Admiralty Inlet, Wash 983-995
Admiralty Island, Alaska 1615,1679
Adugak Island, Alaska 2143
Afognak Island, Alaska 1943-2021
Agattu Island, Alaska 2241
Aialik Bay, Alaska 1887
Akun Bay, Alaska 2101
Akun Island, Alaska 2099,2101
Akutan Harbor, Alaska 2103
Akutan Island, Alaska 2103
Alameda, Calif 529
Alameda Creek, Calif 561
Alaska 1299-2355
Alaska Peninsula 2023-2081
Ala Spit, Wash 1095
Alava Bay, Alaska 1353
Albatross Anchorage, Alaska 2057
Albion, Calif 769
Alcan Harbor, Alaska 2239
Alcatraz Island, Calif 515
Aleck Bay, Wash 1103
Alert Bay, British Columbia 1215
Aleutian Islands, Alaska 2083-2251
Algarrobo, Chile 171
Alitak Bay, Alaska 1983
Allyn, Wash 1063
Alsea Bay, Oreg 831
Alviso Slough, Calif 619
Amak Island, Alaska 2253
Amapala, Honduras 361
Amchitka Island, Alaska 2231,2233
American Bay, Alaska 1457
Amukta Island, Alaska 2159
Anacortes, Wash 1107
Anchorage, Alaska * (132) 1927
Anchorage Bay, Alaska 2033
Anchor Point, Wrangell Narrows, Alaska. 1581
Anchor Point, Cook Inlet,Alaska 1912
Ancud, Chile 129
Anderson Bay, Alaska 2113
Andreon Bay, Alaska 1943
Andrew Bay, Alaska 2207
Angel Island, Calif 619,621
Angostura Guia, Chile 73
Angostura Inglesa, Chile 77
Anguilla Island, Alaska 1511
Annette Island, Alaska 1341,1381
Ano Nuevo Island, Calif 501
Antioch, Calif 701
Antofagasta, Chile * (20) 213
Apokak Creek entrance, Alaska 2301
Apoon Mouth, Alaska 2333
Applegate Cove, Alaska 2151
Applegate Island, Alaska 1875
Arcadia, Wash 1067
Arcata Wharf, Calif 801

No.

Arctic Ocean 2347-2355
Arena Cove, Calif 765
Argentina 1-5
Arica, Chile 229
Arletta, Wash 1045
Astoria, Oreg * (80) 881
Astoria, Oreg 877-881
Atka Island, Alaska 2163-2175
Atkinson Point, British Columbia 1169
Attu Island, Alaska 2243-2251
Auke Bay, Alaska 1647
Avalon, Calif 461

B

Bahia Aguirre, Argentina 3
Bahia Borja, Chile 37
Bahia Buen Suceso, Argentina 1
Bahia Coliumo, Chile 155
Bahia Cuevita, Colombia 303
Bahia Cupica, Colombia 309
Bahia de Chame, Panama 327
Bahia de Culebra, Costa Rica 349
Bahia de Darwin, Galapagos Islands 293
Bahia de Perry, Galapagos Islands 289
Bahia Felipe, Chile 17
Bahia Gente Grande, Chile 23
Bahia Honda, Panama 333
Bahia Huarmey, Peru 243
Bahia India, Chile 65
Bahia Isabela, Galapagos Islands 285
Bahia Linao, Chile 119
Bahia Lota, Chile 151
Bahia Manta, Ecuador 271
Bahia Octavia, Colombia 311
Bahia Pina, Panama 313
Bahia Posesion, Chile 11
Bahia Santiago, Chile 15
Bahia Snug, Chile 31
Bahia Solano, Colombia 307
Bahia Swallow, Chile 39
Bahia Tictoc, Chile 107
Bahia Tongoy, Chile 189
Bahia Tuesday, Chile 53
Bahia Ushuaia, Argentina 5
Bahia Uvita, Costa Rica 341
Bahia Wood, Chile 33
Baja, Calif 399-403
Baker Bay, Wash 867,869
Balboa Bay, Alaska 2057
Balboa, Panama * (44) 321
Balboa Pier, Calif 423
Bamfield, British Columbia 1225
Banco Direccion, Chile 13
Bandon, Oreg 813
Bangor Wharf, Wash 1001
Baranof, Alaska 1677
Baranof Island, Alaska 1661-1665,1695-1713
Barkley Sound, British Columbia 1225
Barlow Cove, Alaska 1651
Barnard Harbor, British Columbia 1265
Barren Island, Alaska 1307
Barren Islands, Alaska 1901
Bartlett Cove, Alaska 1783
Barview, Oreg 851
Bay Center, Wash 927

No.
Bay City, Oreg.......................... 857
Bay City, Wash.......................... 941
Bay Farm Island, Calif.................. 535
Bay of Waterfalls, Alaska............... 2201
Bay Slough (east end), Calif......... 565,567
Baynes Sound, British Columbia.......... 1179
Bayovar, Peru........................... 251
Bear Bay, Alaska........................ 1725
Bear Cove, Kachemak Bay, Alaska......... 1911
Beauty Bay, Alaska...................... 1893
Beaver Bay, Alaska...................... 2059
Beaver Inlet, Alaska.................... 2133
Beaver Passage, British Columbia........ 1279
Bechers Bay, Calif...................... 469
Bechevin Bay, Alaska.................... 2175
Beck Island, Alaska..................... 1589
Behm Canal, Alaska................ 1353-1379
Bella Bella, British Columbia........... 1255
Bella Coola, British Columbia........... 1259
Bell Arm, Alaska........................ 1367
Bellingham, Wash........................ 1121
Bellingham Bay, Wash.............. 1119,1121
Benicia, Calif.......................... 673
Bergh Cove, British Columbia............ 1243
Bering Sea, Alaska................ 2305-2345
Berkeley, Calif......................... 625
Bethel, Alaska.......................... 2303
Big Bay, Alaska......................... 2019
Biorka Island, Alaska................... 1699
Bishop Cut, Calif....................... 719
Black, Alaska........................... 2327
Black River, Alaska..................... 2327
Black Rock, Alaska...................... 2287
Blackfish Sound, British Columbia....... 1211
Blackslough Landing, Calif.............. 709
Blaine, Wash............................ 1139
Blake Island, Alaska.................... 1427
Blakes Landing, Calif................... 755
Blanco Encalada, Chile.................. 211
Blunden Harbor, British Columbia........ 1213
Boca de Quadra, Alaska.................. 1335
Bodega Harbor, Calif.................... 761
Bogoslof Island, Alaska................. 2135
Bolinas Bay, Calif...................... 747
Bolinas Lagoon, Calif................... 749
Boot Bay, Alaska........................ 2199
Borden Highway Bridge, Calif........ 728,729
Bradfield Canal, Alaska................. 1427
Bradmoor Island......................... 689
Brazos Drawbridge....................... 665
Bremerton, Wash......................... 1031
Brighton, Oreg.......................... 861
Bristol Bay, Alaska............... 2253-2287
British Columbia.................. 1149-1329
Brookings, Oreg......................... 807
Brown Cove, Alaska...................... 1607
Brownsville, Wash....................... 1021
Bucareli Bay, Alaska.............. 1501-1507
Buchupureo, Chile....................... 157
Bucksport, Calif........................ 795
Budd Inlet, Wash.................. 1075,1077
Buenaventura, Colombia * (40)........... 297
Bugle Point, Alaska..................... 2179
Burns Point, Wash....................... 1071
Burrard Inlet, British Columbia... 1169,1171
Burroughs Bay, Alaska................... 1365
Burrows Bay, Wash....................... 1105
Burton, Wash............................ 1039
Bush Point, Wash........................ 993
Bute Inlet, British Columbia............ 1189
Butterworth Island, Alaska.............. 1565

C

Cabo de Hornos, Chile * (4)............. 61

No.
Cabo Pasado, Ecuador.................... 275
Cabo Pilar, Chile....................... 55
Calaveras Point, Calif.................. 597
Caldera, Chile.......................... 201
Caleta Aeolian, Galapagos Islands....... 291
Caleta Barranquillas, Chile............. 199
Caleta Junin, Chile..................... 225
Caleta La Hacienda, Chile............... 143
Caleta Lobitos, Peru.................... 257
Caleta Lobos, Chile..................... 221
Caleta Oscuro, Chile.................... 187
Caleta Pascuas, Chile................... 85
Caleta Playa Parda, Chile............... 41
Caleta Saint Martin, Chile.............. 59
Caleta Sylvia, Chile.................... 45
Caleta Tagus, Galapagos Islands......... 287
Caleta Totoralillo, Chile............... 193
California.......................... 405-805
Callao, Peru * (28)..................... 239
Camp Cove, Alaska....................... 1887
Campbell Island, British Columbia....... 1255
Canada............................ 1149-1297
Canal Chacao, Chile................. 127,131
Canal Smyth, Chile...................... 49-51
Canoe Bay, Alaska....................... 2069
Canoe Cove, Alaska...................... 1745
Cape Alava, Wash........................ 959
Cape Bingham, Alaska.................... 1755
Cape Chacon, Alaska..................... 1303
Cape Chlanak, Alaska.................... 2211
Cape Chunu, Alaska...................... 2215
Cape Flattery, Wash..................... 961
Cape Flores, Alaska..................... 1499
Cape Fox, Alaska........................ 1309
Cabo de Hornos, Chile * (4)............. 61
Cape Mendocino, Calif................... 783
Cape Mordvinof, Alaska.................. 2091
Cape Muzon, Alaska...................... 1299
Cape Ninilchik, Alaska.................. 1913
Cape Ommaney, Alaska.................... 1695
Cape Romanzof, Alaska................... 2325
Cape Sagak, Alaska...................... 2145
Cape Sarichef, Alaska................... 2093
Cape Spencer, Alaska.................... 1757
Cape Utalug, Alaska..................... 2167
Carelmapu, Chile........................ 131
Carmanah Point, British Columbia........ 1223
Carmel Bay, Calif....................... 481
Carmel Cove, Calif...................... 481
Carolyn Island, Alaska.................. 2341
Carquinez Strait, Calif............. 659-675
Carr Inlet, Wash.................. 1047,1049
Carrizal Bajo, Chile.................... 197
Carroll Inlet, Alaska............. 1345,1347
Carry Inlet, Alaska..................... 2021
Carter Bay, British Columbia............ 1263
Carter Spit, Alaska..................... 2291
Case Inlet, Wash.................. 1061,1063
Castle Islands, Alaska.................. 1571
Castro, Chile........................... 115
Catalina Harbor, Calif.................. 459
Cathlamet, Wash......................... 889
Cemetery Point, Alaska.................. 2187
Champerico, Guatemala................... 371
Chanaral de las Animas, Chile........... 205
Chance Cove, Alaska..................... 1891
Charleston, Oreg........................ 815
Chatham Channel, British Columbia....... 1207
Chatham Sound, British Columbia... 1281-1287
Chatham Strait, Alaska............ 1661-1693
Chehalis River, Wash.................... 949
Chemainus, British Columbia............. 1163
Chenega Island, Alaska.................. 1879
Chernofski Harbor, Alaska............... 2119

No.
Chevron Oil Company Pier, Calif........ 631
Chiachi Island, Alaska................. 2037
Chichagof Harbor, Alaska............... 2245
Chichagof Island, Alaska..... 1691,1737-1753
Chile.................................. 7-229
Chilkat Inlet, Alaska.................. 1655
Chilkoot Inlet, Alaska................. 1657
Chimbote, Peru......................... 245
Chinook, Wash.......................... 869
Chisak Bay, Alaska..................... 2185
Cholmondeley Sound, Alaska........ 1393,1395
Chuckanut Bay, Wash.................... 1119
Chuginadak Island, Alaska.............. 2151
Clallam Bay, Wash...................... 965
Clam Lagoon, Alaska.................... 2191
Clarence Strait, Alaska........... 1381-1431
Clarksburg, Calif...................... 743
Clayoquot, British Columbia............ 1229
Cleveland Passage, Alaska.............. 1613
Coal Bay, Alaska....................... 2061
Cobija, Chile.......................... 217
Cocos Island, Costa Rica............... 353
Cold Bay, Alaska.................. 2073,2075
Collinsville, Calif.................... 733
Colombia.......................... 295-311
Colorado River entrance, Mexico........ 395
Columbia River.................... 865-917
Comfort Cove, Alaska................... 1825
Commencement Bay, Wash................. 1043
Comox, British Columbia................ 1179
Composite Island, Alaska............... 1789
Constantine Harbor, Alaska............. 2233
Constitucion, Chile.................... 161
Controller Bay, Alaska................. 1805
Convenient Cove, Alaska................ 1369
Cook Inlet, Alaska................ 1901-1941
Coon Island, Alaska.................... 1343
Coos Bay, Oreg.................... 815-819
Copper Harbor, Alaska.................. 1451
Copper River Delta, Alaska........ 1807-1809
Coquille River, Oreg................... 813
Coquimbo, Chile........................ 191
Cordero Channel, British Columbia...... 1187
Cordova, Alaska * (116)................ 1819
Cordova Bay, Alaska............... 1433-1447
Corinto, Nicaragua..................... 359
Corkscrew Slough, Calif................ 575
Cormorant Island, British Columbia..... 1215
Cornet Bay, Wash....................... 1099
Coronation Island, Alaska.............. 1537
Corral, Chile........................... 135
Corte Madera Creek, Calif.............. 635
Cortes Island, British Columbia........ 1181
Cosmos Point, Frederick Sound, Alaska.. 1603
Costa Rica........................ 339-353
Coupeville, Wash....................... 1091
Cowichan Bay, British Columbia......... 1161
Coyote Creek, Calif............... 605-613
Coyote Hills Slough, Calif............. 563
Coyote Point, Calif.................... 555
Craig, Alaska.......................... 1505
Crescent Bay, Wash..................... 969
Crescent City, Calif................... 805
Crockett, Calif........................ 671
Cross Sound, Alaska............... 1755-1765
Crown Point, Mission Bay, Calif........ 415
Cruz Pass, Alaska...................... 1507
Culross Bay, Alaska.................... 1869
Curanipe, Chile........................ 159
Cuyler Harbor, Calif................... 471
Cypress Island, Wash.............. 1113,1117
Cyrus Cove, Alaska..................... 1527

No.
D

Dabob Bay, Wash........................ 1003
Dall Island, Alaska.......... 1299,1479-1487
Dangerous Passage, Alaska.............. 1879
Davidson Inlet, Alaska............ 1515-1535
Davis River, Alaska.................... 1327
Day Harbor, Alaska..................... 1883
Deception Pass, Wash.............. 1097,1099
Deer Passage, British Columbia......... 1185
Delarof Islands, Alaska........... 2225-2229
Dent Point, Alaska..................... 2043
Des Moines, Wash....................... 1037
Destruction Island, Wash............... 955
Dewey Anchorage, Alaska................ 1413
Diamond Point, Alaska.................. 1503
Discovery Bay, Wash.................... 977
Discovery Passage, B. C........... 1183,1191
Diver Islands, Alaska.................. 1489
Divide Head, Alaska.................... 1395
Dixon Entrance.................... 1293-1315
Dixon Harbor, Alaska................... 1793
Dofflemeyer Point, Wash................ 1075
Dog Point, Alaska...................... 1703
Dolgoi Harbor, Alaska.................. 2065
Dolgoi Island, Alaska.................. 2065
Dolphin Point, Alaska.................. 2013
Dora Harbor, Alaska.................... 2083
Douglas Channel, British Columbia...... 1269
Douglas Island, Alaska................. 1645
Drift River Terminal, Alaska........... 1933
Driftwood Bay, Alaska.................. 2147
Dry Bay, Alaska........................ 1797
Dry Pass, Alaska....................... 1743
Dry Spruce Island, Alaska.............. 2007
Dry Strait, Frederick Sound, Alaska.... 1601
Duke Island, Alaska............... 1305,1331
Dumbarton Highway Bridge, Calif........ 585
Duncan Bay, British Columbia........... 1183
Duncan Canal, Alaska.............. 1565-1571
Dungeness, Chile....................... 7
Dungeness, Wash........................ 973
Dutch Harbor, Alaska * (140)........... 2109
Duwamish Waterway, Wash................ 1025
Dyes Inlet, Wash....................... 1033

E

Eagle Bay, Alaska...................... 2123
Eagle Cliff, Wash...................... 893
Eagle Harbor, Wash..................... 1117
Eagle Point, Alaska.................... 1491
East Foreland, Alaska.................. 1921
East Island, Hawaiian Islands.......... 2363
Echo Bay, Wash......................... 1135
Ecuador........................... 261-293
Edgerley Island, Calif................. 663
Edmonds, Wash.......................... 1015
Edna Bay, Alaska....................... 1535
Eek Channel, Kuskokwim Bay, Alaska..... 2293
Eel River, Calif....................... 785
Egegik, Alaska......................... 2263
Egegik River, Alaska.............. 2261,2263
Eklutna, Alaska........................ 1929
El Capitan Island, Alaska.............. 1525
El Capitan Passage..................... 1551
El Salvador....................... 363-367
El Segundo, Calif...................... 441
Elbow Bay, Alaska...................... 1441
Elbow Passage, Alaska.................. 1739
Eld Inlet, Wash........................ 1073
Eliza Harbor, Alaska................... 1617

No.
Elkhorn, Calif. ... 493
Elkhorn Slough, Calif. ... 489,497
Elkhorn Yacht Club, Calif. ... 487
Elk River, Calif. ... 794
Ellamar, Alaska ... 1855
Elliott Bay, Wash. ... 1023
Ellsworth, Wash. ... 913
Empire, Coos Bay, Oreg. ... 817
English Bay, Alaska ... 2107
Ensenada, Mexico ... 403
Ensenada Utria, Colombia ... 305
Entrance Island, Alaska ... 1593
Ernest Sound, Alaska ... 1411
Eshamy Bay, Alaska ... 1877
Esperanza Inlet, British Columbia ... 1235
Esquimalt, British Columbia ... 1151
Etienne Bay, Alaska ... 2251
Etolin Island, Alaska ... 1413,1423
Eureka, Calif. ... 796
Eureka Slough Bridge, Calif. ... 797
Evangelistas, Chile ... 71
Evans Island, Alaska ... 1843
Everett, Wash. ... 1081
Exchange Cove, Alaska ... 1421
Excursion Inlet, Alaska ... 1777
Explorer Bay, Alaska ... 2173
Eyak River, Alaska ... 1811

F

Fairway Island, Alaska ... 1735
Falcon Arm, Alaska ... 1737
False Pass, Alaska ... 2087
False River, Calif. ... 721
Farewell Harbor, British Columbia ... 1211
Favorite Bay, Alaska ... 1687
Fenimore Pass, Alaska ... 2177
Ferndale, Wash. ... 1137
Fidalgo Island, Wash. ... 1101
Fields Landing, Calif. ... 791
Filucy Bay, Wash. ... 1057
Finch Cove, Alaska ... 2161
Finger Bay, Alaska ... 2195
Finger Point, Alaska ... 1579
Finlayson Channel, B. C. ... 1261,1263
Fire Island, Alaska ... 1923
Fish Bay, Alaska ... 1721
Fisher Channel, British Columbia ... 1253
Fitzgibbon Cove, Alaska ... 1363
Fitz Hugh Sound, B. C. ... 1249,1251
Flaxman Island, Alaska ... 2351
Florence, Oreg. ... 829
Flynn Cove, Alaska ... 1775
Fords Cove, British Columbia ... 1325
Forrester Island, Alaska ... 1481
Fort Bragg Landing, Calif. ... 775
Fort Ross, Calif. ... 763
Fossil River, Alaska ... 2311
Fox Bay, Alaska Peninsula ... 2041
Fox Bay, Whale Island, Alaska ... 1957
Fraser River, British Columbia ... 1167
Frederick Sound, Alaska ... 1601-1619
French Frigate Shoals, Hawaiian Islands 2363
Freshwater Bay, Alaska ... 1691
Friday Harbor, Wash. ... 1133
Fritz Cove, Alaska ... 1645
Fulford Harbor, British Columbia ... 1157
Funter, Alaska ... 1649
Funter Bay, Alaska ... 1649

G

Galapagos Islands ... 281-293
Gallinas Creek, Calif. ... 651
No.
Gambier Bay, Alaska ... 1625
Gardiner, Oreg. ... 823
Gardiner, Wash. ... 977
Gardner Canal, British Columbia ... 1271
Gareloi Island, Alaska ... 2227
Garibaldi, Oreg. ... 853
Gaviota, Calif. ... 455
General Fish Company Pier ... 484
Georgiana Slough, Calif. ... 713
Gertrude Cove, Alaska ... 2235
Gibbon Anchorage, Alaska ... 1839
Gig Harbor, Wash. ... 1041
Gilmer Bay, Alaska ... 1709
Glacier Bay, Alaska ... 1783-1789
Glacier Island, Alaska ... 1863
Glendale Cove, British Columbia ... 1209
Gnat Cove, Alaska ... 1345
Gold Street Bridge, Calif. ... 607
Goletas Channel, British Columbia ... 1219
Golfito, Costa Rica ... 339
Golfo de Ancud, Chile ... 117-123
Golfo Corcovado, Chile ... 103-115
Golfo Elena, Costa Rica ... 351
Golovnin Bay, Alaska ... 2341
Good Island, Alaska ... 1625
Goodnews Bay, Alaska ... 2289
Goose Island, Alaska ... 1771
Gooseneck Harbor, Alaska ... 1483
Gowlland Harbor, British Columbia ... 1191
Graham Island, British Columbia ... 1293-1297
Granite Cove, Alaska ... 1759
Granite Rock, Calif. ... 589
Grant Line Canal, Calif. ... 731
Grant Point, Alaska ... 2255
Gravel Point, Alaska ... 1817
Graves Harbor, Alaska ... 1791
Grayland, Wash. ... 935
Grays Harbor, Wash. ... 939-949
Great Sitkin Island, Alaska ... 2179,2181
Greely Point, Alaska ... 1639
Greenbank, Wash. ... 1089
Green Island, Alaska ... 1839
Grenville Channel, British Columbia ... 1273
Greys Island, Sumner Strait, Alaska ... 1575
Grief Island, Alaska ... 1569
Guadalupe Slough, Calif. ... 601
Guatemala ... 369,371
Guayaquil, Ecuador * (36) ... 265
Guaymas, Mexico * (60) ... 391
Guemes Channel, Wash. ... 1107
Gulf of Alaska ... 1791-1813
Gulf of California ... 387-397
Gulf of Esquibel, Alaska ... 1509-1513
Gusty Bay, Alaska ... 2217

H

Hadley, Alaska ... 1409
Haines, Alaska ... 1657
Hale Passage, Puget Sound ... 1045
Hale Passage, Wash. ... 1123
Haleiwa, Hawaii ... 2377
Haley Anchorage, Alaska ... 1721
Halibut Bay, Alaska ... 1323
Halibut Cove, Kachemak Bay, Alaska ... 1909
Hamilton Bay, Alaska ... 1597
Hana, Hawaii ... 2405
Hanalei Bay, Hawaii ... 2375
Hanamaulu Bay, Hawaii ... 2373
Hanapepe Bay, Hawaii ... 2369
Hanauma Bay, Hawaii ... 2383
Hanning Bay, Alaska ... 1835
Hansville, Wash. ... 1011
Haro Strait, Wash. ... 1141-1147

	No.
Harrington Point, Wash	885
Hartley Bay, British Columbia	1267
Hassler Harbor, Alaska	1341
Hassler Island, Alaska	1369
Hawaii Island, Hawaii	2417-2427
Hawaiian Islands	2357-2429
Hawkins Island, Alaska	1823
Haystack Island, British Columbia	1315
Heceta Island, Alaska	1515
Henderson Inlet, Wash	1059
Herbert Island, Alaska	2153
Hercules, Calif	643
Herschel Island, Arctic Ocean	2353
Hetta Inlet, Alaska	1449-1453
Hill Island, Alaska	1743
Hilo, Hawaii	2427
Hinchinbrook Island, Alaska	1827,1829
Hobart Bay, Alaska	1623
Hogg Bay, Alaska	1881
Hog Island, San Antonio Creek, Calif	653
Holbrook, Alaska	1533
Holkham Bay, Alaska	1633
Hollis Anchorage, Alaska	1407
Holt, Whiskey Slough, Calif	727
Holtz Bay, Alaska	2247
Homer, Alaska	1910
Home, Wash	1047
Honduras	361
Honolulu, Hawaii * (160)	2381
Honuapo, Hawaii	2425
Hood Canal, Wash	997-1009
Hookton Slough, Calif	793
Hoonah Harbor, Alaska	1779
Hot Springs Bay, Alaska	2219
Howe Sound, British Columbia	1173
Huacho, Peru	241
Huasco, Chile	195
Humboldt Bay, Calif * (76)	789
Humboldt Bay, Calif	787-801
Hungry Harbor, Wash	871
Hunter Bay, Alaska	1437
Hunters Point, Calif	541
Hyde Point, Wash	1053

I

	No.
Icy Bay, Alaska	1801
Icy Strait, Alaska	1767-1789
Idaho Inlet, Alaska	1767
Ideal Cove, Mitkof Island, Alaska	1605
Ikatan Bay, Alaska	2085
Iliamna Bay, Alaska	1939
Ilo, Peru	231
Ilwaco, Wash	867
Inanudak Bay, Alaska	2139
Inian Cove, Alaska	1763
Ingraham Bay, Alaska	1383
Inverness, Calif	759
Iquique, Chile	223
Irish Landing, Calif	723
Isanotski Strait, Alaska	2087
Isla Cebaco, Panama	331
Isla del Rey, Panama	317
Isla Diego Ramirez, Chile	63
Isla Guadalupe, Mexico	401
Isla Guafo, Chile	101
Isla Guamblin, Chile	99
Isla Isabela, Galapagos Islands	285-289
Isla Noir, Chile	67
Isla Parida, Panama	335
Isla San Cristobal, Galapagos Islands	281
Isla Santa Maria, Chile	149
Isla Santa Maria, Galapagos Islands	283
Isla Socorro, Mexico	383
Islas Week, Chile	69
Islote Pollo, Chile	49
Izembek Lagoon, Alaska	2255
Izhut Bay, Alaska	1953

J

	No.
Jack Bay, Alaska	1859
Jackson Cove, Alaska	1863
Jap Bay, Alaska	1979
Johnston Island, Hawaiian Islands	2429
Johnstone Point, Alaska	1827
Johnstone Strait, B. C.	1197,1201-1205
Joice Island, Calif	681
Juneau, Alaska * (108)	1643

K

	No.
Kachemak Bay, Alaska	1906-1911
Kagalaska Island, Alaska	2187,2189
Kah Shakes Cove, Alaska	1333
Kahoolawe Island, Hawaii	2413,2415
Kahului, Hawaii	2403
Kaigani Harbor, Alaska	1455
Kaigani Strait, Alaska	1455,1457
Kailua Kona, Hawaii	2421
Kake, Keku Strait, Alaska	1599
Kakul Narrows, Alaska	1719
Kalama, Wash	899
Kamalo Harbor, Hawaii	2397
Kamishak Bay, Alaska	1941
Kanaga Bay, Alaska	2213
Kanaga Island, Alaska	2209-2215
Kanaka Bay, Wash	1141
Kanatak Lagoon, Alaska	2029
Kaneohe Bay, Hawaii	2389
Karheen, Alaska	1517
Karta Bay, Alaska	1405
Kasaan, Alaska	1403
Kassan Bay, Alaska	1397-1407
Kashega Bay, Alaska	2117
Kasnyku Bay, Alaska	1681
Kasook Inlet, Alaska	1461
Kassa Inlet, Alaska	1439
Katmai Bay, Alaska	2025
Kauai Island, Hawaii	2367-2375
Kaumalapau, Hawaii	2401
Kaunakakai, Hawaii	2395
Kawaihae, Hawaii	2419
Kawanak Pass, Alaska	2331
Kayak Point, Wash	1085
Kazakof Bay, Alaska	1955
Kealakekua Bay, Hawaii	2423
Keete Inlet, Alaska	1447
Keete Island, Alaska	1445
Keku Strait, Alaska	1585-1599
Kell Bay, Alaska	1543
Kelley Point, Oreg	905
Kelp Island Passage, Alaska	1305
Kelsey Bay, British Columbia	1201
Kemano Bay, British Columbia	1271
Kenai City Pier, Alaska	1917
Kenai Peninsula, Alaska	1883-1899
Kenai River, Alaska	1915
Kernville, Oreg	847
Ketchikan, Alaska * (104)	1349
Kigul Island, Alaska	2149
Kihei, Hawaii	2409
Killisnoo, Alaska	1685
Kimshan Cove, Alaska	1741
King Cove, Alaska	2071
Kings Bay, Alaska	1867
Kirby Park, Calif	495
Kiska Harbor, Alaska	2237

No.
Kiska Island, Alaska 2235,2237
Kisselen Bay, Alaska 2133
Kitimat, British Columbia 1269
Kiwalik, Alaska 2347
Kizhuyak Bay, Alaska 1959
Kizhuyak Point, Alaska 1961
Klag Bay, Alaska 1739
Klaskish Inlet, British Columbia 1241
Klemtu Passage, British Columbia 1261
Klokachef Island, Alaska 1715
Knapp Landing, Wash 903
Knight Inlet, British Columbia 1209
Knight Island, Alaska 1845,1847
Knight Island Passage, Alaska 1877
Knik Arm, Alaska 1927,1929
Knox Bay, British Columbia 1199
Kodiak, Alaska * (136) 1967
Kodiak Harbor, Alaska 1967
Kodiak Island, Alaska 1943-2021
Kokechik Bay, Alaska 2323
Kokinhenik Island, Alaska 1807
Kolo, Hawaii 2393
Kootznahoo Inlet, Alaska 1687,1689
Korovin Bay, Alaska 2163
Korovin Island, Alaska 2045
Kosciusko Island, Alaska 1533,1539,1549
Kotzebue Sound, Alaska 2347
Kruzof Island, Alaska 1707,1709
Kuheia Bay, Hawaii 2413
Kuiu Island, Alaska Page 180
Kukak, Alaska 2023
Kukak Bay, Alaska 2023
Kulilak Bay, Alaska 2121
Kulak Bay, Alaska 2191-2195
Kumeon Bay, British Columbia 1319
Kupreanof Harbor, Alaska 2039
Kupreanof Island, Alaska 1567,1597,1611
Kupreanof Strait, Alaska 2005-2011
Kuskokwak Creek, Alaska 2297
Kuskokwim Bay, Alaska 2289-2303
Kvichak, Alaska 2277
Kvichak Bay, Alaska 2265-2279
Kvichak River, Alaska 2275-2279
Kwikluak Pass, Alaska 2329
Kyuquot Sound, British Columbia 1237

L

La Conner, Wash 1093
La Jolla, Calif 417
La Libertad, Ecuador 267
La Libertad, El Salvador 365
La Paz, Mexico 397
La Push, Wash 957
La Union, El Salvador * (52) 363
Ladysmith, British Columbia 1165
Lahaina, Hawaii 2411
Laie Bay, Hawaii 2391
Lake Bay, Alaska 1417
Lakeville, Calif 647
Lama Passage, British Columbia 1255
Lanai Island, Hawaii 2401
Lancaster Cove, Alaska 1393
Landlocked Bay, Alaska 1853
Larsen Bay, Alaska 1991
Lash Bay, Alaska 2223
Laska Cove, Alaska 2189
Latouche, Alaska 1841
Laysan Island, Hawaiian Islands 2361
Lazy Bay, Alaska 1983
Lees Cabins, Alaska 2031
Lemesurier Island Light, Alaska 1769
Lenard Harbor, Alaska 2073
Level Islands, Alaska 1563

No.
Levelock, Alaska 2279
Liberty Bay, Wash 1019
Liesnoi Island, Alaska 1617
Lindenburg Head, Alaska 1733
Lindenburg Peninsula, Alaska 1579
Lisianski Inlet, Alaska 1749
Lisianski Island, Hawaiian Islands 2359
Lisianski Peninsula, Alaska 1703
Lisianski Strait, Alaska 1745,1747
Little River Harbor, Calif 771
Lituya Bay, Alaska 1795
Llico, Chile 163
Long Beach, Calif 429,433
Long Beach, Wash 919
Longbranch, Wash 1057
Longview, Wash 897
Lopez Island, Wash 1103,1127,1131
Loring, Alaska 1379
Los Angeles, Calif * (68) 437
Los Angeles, Calif 439
Los Negritos, Colombia 299
Los Patos, Calif 427
Los Vilos, Chile 185
Lowe Inlet, British Columbia 1273
Lyman Anchorage, Alaska 1409
Lynn Canal, Alaska 1649-1659

M

Maalaea Bay, Hawaii 2409
Mabel Island, Alaska 1443
Macleod Harbor, Alaska 1833
McFarland Islands, Alaska 1463
Mackenzie Bay, Alaska 2353,2355
McNeil Island, Wash 1053
McPherson Passage, Alaska 1865
Magellan Strait 7-55
Mahukona, Hawaii 2417
Makena, Hawaii 2407
Maknik Lagoon, Alaska 2319
Malaspina Strait, British Columbia 1177
Malga Bay, Alaska 2105
Malina Bay, Alaska 2015
Mallard Island Ferry Wharf, Calif 697
Mansfield Peninsula, Alaska 1651
Manzanillo, Mexico 379
Marble Island, Alaska 1531
Marble Passage, Alaska 1529
Mare Island 659
Mare Island Strait, Calif 661
Markham, Wash 943
Marmot Bay, Alaska 1955
Marmot Island, Alaska 1951
Marmot Strait, Alaska 1951
Marrowstone Island, Wash 991
Marrowstone Point, Wash 989
Marshall, Calif 757
Martin Harbor, Alaska 2163
Mary Island, Alaska 1337
Massacre Bay, Alaska * (148) 2243
Masset Harbor, British Columbia 1297
Matarani, Peru * (24) 233
Maui Island, Hawaii 2403-2411
Maullin, Chile 133
Mayne Island, British Columbia 1159
Mazatlan, Mexico 385
Meares Island, Alaska 1493
Meares Passage, Alaska 1489-1493
Meins Landing, Calif 691
Mejillones del Sur, Chile 215
Mendocino, Calif 773
Mendocino Bay, Calif 773
Menefee Anchorage, Alaska 1385
Metlakatla, Alaska 1389

	No.
Mexico	373-403
Miami Cove, Oreg	855
Middle Bluff, Alaska	2265
Middle River, Calif	729
Middleton Island, Alaska	1813
Midway Islands, Hawaiian Islands	2357
Milbanke Sound, British Columbia	1257
Mill Bay, British Columbia	1321
Miner Island, Alaska	1749
Mining Camp, Alaska	1993
Minnie Bay, Alaska	1433
Mist Harbor, Alaska	2049
Mitchell Bay, Alaska	1689
Mitkof Island, Alaska	1603
Moghoweyik River, Alaska	2315
Moira Sound, Alaska	1387
Mokelumne River, Calif	713-717
Moku o Loe, Hawaii	2387
Molokai Island, Hawaii	2393-2399
Montague Island, Alaska	1831-1837
Monte Carlo Island, Alaska	1585
Monterey, Calif	483
Monterey Bay, Calif	483,499
Montesano, Wash	949
Montezuma Slough, Calif	739
Mop Point, Alaska	1339
Morakas Point, Alaska	2269
Morro Beach, Calif	477
Morse Cove, Alaska	1331
Morzhovoi Bay, Alaska	2077
Moser Bay, Alaska	1985
Moss Landing, Calif	485
Mowry Slough, Calif	595
Mud Bay, Alaska	1763
Mud Bay, Cordova Bay, Alaska	1449
Mud Slough, Calif	599
Mugu Lagoon, Calif	445
Muir Inlet, Alaska	1787
Mukilteo, Wash	1079
Mystery Bay, Wash	991

N

Nachalni Island, Alaska	2009
Nagai Island, Alaska	2047-2049
Naha Bay, Alaska	1379
Nahcotta, Wash	923
Nakat Harbor, Alaska	1313
Naked Island, Alaska	1865
Nakeen, Alaska	2275
Naknek Air Base, Alaska	2273
Naknek River, Alaska	2267-2273
Namu Harbor, British Columbia	1249
Nanaimo, British Columbia	1175
Naos Island, Panama	323
Napa, Napa River, Calif	667
Napa River, Calif	663-667
Napoopoo, Hawaii	2423
Nasparti Inlet, British Columbia	1239
Nass River, British Columbia	1321
Natalia Point, Alaska	1473
National City, Calif	411
Nawiliwili Bay, Hawaii	2371
Nazan Bay, Alaska	2165
Neah Bay, Wash	963
Nehalem, Oreg	863
Nehalem River, Oreg	861,863
Nehenta Bay, Alaska	1391
Nestucca Bay, Oreg	849
Neva Strait, Alaska	1711,1713
New Hope Bridge, Calif	717
New York Slough, Calif	723
Newark Slough, Calif	583
Newport, Oreg	835

	No.
Newport Bay Entrance, Calif	421
Niblack Anchorage, Alaska	1387
Nicaragua	355-359
Nichols Bay, Alaska	1301
Nigelius Point, Alaska	1347
Niihau Island, Hawaii	2365
Nikishka, Alaska * (128)	1919
Ninilchik, Alaska	1914
Nismeni Cove, Alaska	1729
Nisqually Reach, Wash	1055
Niyrakpak Lagoon, Alaska	2313
Nome, Alaska	2343
Nonopapa, Hawaii	2365
Nootka Sound, British Columbia	1233
Nordyke Island, Alaska	1941
North Bay, Norton Sound, Alaska	2339
North Bentinck Arm, British Columbia	1259
Northeast Arm, Alaska	1999
Northeast Cape, Alaska	2309
North Foreland, Alaska	1931
North Inian Pass, Alaska	1763
North Pass, Tlevak Strait, Alaska	1471
Norton Sound, Alaska	2329-2343
Noyes Island, Alaska	1509
Noyo River, Calif	777
Nuka Bay, Alaska	1893
Nuka Passage, Alaska	1895
Nunivak Island, Alaska	2321
Nushagak Bay, Alaska	2281-2287
Nushagak Bay, Alaska * (152)	2283

O

Oahu Island, Hawaii	2377-2391
Oak Bay, Wash	995
Oakland, Calif	523-527,531,533
Oakland Airport, Calif	537
Oakland Bay, Wash	1069
Ocean Beach, Calif	509
Ocean Falls, British Columbia	1253
Ogden Passage, Alaska	1741
Ogliuga Island, Alaska	2225
Okee Bay, Alaska	2141
Olga Bay, Alaska	1987
Olga Point, Alaska	1705
Olga Strait, Alaska	1705
Olive Cove, Alaska	1425
Olympia, Wash	1077
Omakstalia Point, Alaska	2271
Onion Bay, Alaska	2005
Orca, Alaska	1821
Orca Inlet, Alaska	1815-1821
Orcas Island, Wash	1125,1129
Orcas, Wash	1129
Oregon	807-917
Orwood, Old River, Calif	725
Otkriti Bay, Alaska	2241
Otter Point, Alaska	2137
Ouzinkie, Alaska	1963
Owen Bay, British Columbia	1195
Oyster Point Marina, Calif	549

P

Pacific Beach, Wash	951
Pacific Mariculture Dock, Calif	491
Padilla Bay, Wash	1109
Paita, Peru	253
Palix River, Wash	927
Palo Alto Marker #8, Calif	591
Palo Alto Yacht Harbor, Calif	593
Panama	313-337
Paposo, Chile	209
Papudo, Chile	181

No.
Parry Passage, British Columbia........ 1293
Paso Goree, Chile...................... 57
Paso Lagartija, Chile.................. 121
Paso Tautil, Chile..................... 123
Passage Canal, Alaska.................. 1873
Patos Island Wharf, Wash............... 1147
Patton Bay, Alaska..................... 1831
Paul Island, Alaska.................... 2039
Pavlof Bay, Alaska................ 2067,2069
Pearse Canal, Alaska................... 1317
Peavine Pass, Wash..................... 1115
Pender Harbor, British Columbia........ 1177
Perenosa Bay, Alaska................... 1945
Peril Strait, Alaska.............. 1719-1735
Peru.............................. 231-259
Petaluma River, Calif.............. 647,649
Pete Dahl Slough, Alaska............... 1809
Petersburg, Alaska..................... 1583
Peterson Bay, Alaska................... 2079
Pichidangui, Chile..................... 183
Pickering Passage, Wash........... 1065,1067
Picnic Harbor, Alaska.................. 1899
Pierce Harbor, Calif................... 679
Pikmiktalik River, Alaska.............. 2335
Pinole Point, Calif.................... 641
Pirate Cove, Alaska.................... 2051
Pisagua, Chile......................... 227
Pisco, Peru............................ 237
Pittsburg, Calif....................... 699
Pleasant Beach, Wash................... 1029
Pleasant Harbor, Wash.................. 1007
Pogibshi Point, Alaska................. 1727
Point Adams, Oreg...................... 873
Point Adolphus, Alaska................. 1773
Point Arena, Calif..................... 767
Point Arguello, Calif.................. 473
Point Barrow, Alaska................... 2349
Point Bonita, Calif.................... 511
Point Buckler, Calif................... 695
Point Chauncey, Calif.................. 623
Point Chehalis, Wash................... 939
Point Elizabeth, Alaska................ 1731
Point Grenville, Wash.................. 953
Point Isabel, Calif.................... 627
Point Lavinia, Alaska.................. 1765
Point Lockwood, Alaska................. 1577
Point Loma, Calif...................... 405
Point Migley, Wash..................... 1123
Point No Point, Wash................... 1013
Point Orient, Calif.................... 633
Point Partridge, Wash.................. 981
Point Reyes, Calif..................... 751
Point St. Albans, Alaska............... 1545
Point San Bruno, Calif................. 551
Point San Pedro, Calif................. 639
Point San Quentin, Calif............... 637
Point Thatcher, Alaska................. 1683
Pole Anchorage, Alaska................. 1539
Polk Inlet, Alaska..................... 1401
Popof Island, Alaska.............. 2051,2053
Popokamute, Alaska..................... 2299
Porcher Island, British Columbia....... 1281
Port Alberni, British Columbia......... 1227
Port Alexander, Alaska................. 1661
Port Alice, Alaska..................... 1515
Port Allen, Hawaii..................... 2369
Port Althorp, Alaska................... 1761
Port Angeles, Wash..................... 971
Port Audrey, Alaska.................... 1847
Port Bainbridge, Alaska................ 1881
Port Banks, Alaska..................... 1697
Port Beauclerc, Alaska................. 1553
Port Blackney, British Columbia........ 1257
Port Blakely, Wash..................... 1027

No.
Port Camden, Alaska.................... 1595
Port Canaveral, British Columbia....... 1277
Port Chalmers, Alaska.................. 1837
Port Chatham, Alaska................... 1903
Port Chester, Alaska................... 1389
Port Chicago, Calif.................... 685
Port Clarence, Alaska.................. 2345
Port Conclusion, Alaska................ 1663
Port Dick, Alaska...................... 1897
Port Etches, Alaska.................... 1829
Port Fidalgo, Alaska.............. 1851,1853
Port Frederick, Alaska................. 1779
Port Gamble, Wash...................... 999
Port Graham, Alaska.................... 1905
Port Gravina, Alaska................... 1825
Port Hardy, British Columbia........... 1217
Port Harvey, British Columbia.......... 1205
Port Heiden, Alaska.................... 2259
Port Hobron, Alaska.................... 1975
Port Houghton, Alaska.................. 1621
Port Hueneme, Calif.................... 447
Port Ludlow, Wash...................... 997
Port McArthur, Alaska.................. 1541
Port Madison, Wash..................... 1017
Port Malmesbury, Alaska................ 1669
Port Moller, Alaska.................... 2257
Port Neville, British Columbia......... 1203
Port Orchard, Wash................ 1021,1031
Port Orford, Oreg...................... 811
Port Protection, Alaska................ 1555
Port San Juan, British Columbia........ 1221
Port San Luis Wharf, Calif............. 475
Port Santa Cruz, Alaska................ 1501
Port Simpson, British Columbia......... 1287
Port Snettisham, Alaska................ 1635
Port Stephens, British Columbia........ 1275
Port Susan, Wash.................. 1083-1087
Port Tongass, Alaska................... 1311
Port Townsend, Wash * (88)............. 985
Port Townsend (Point Hudson)........... 987
Port Valdez, Alaska.................... 1861
Port Walter, Alaska.................... 1665
Portage Bay, Alaska............... 1611,2029
Portland, Oreg......................... 909
Portland Canal.................... 1323-1329
Possession Sound, Wash............ 1079,1081
Potrero Point, Calif................... 539
Poulsbo, Wash.......................... 1019
Povorotni Island, Alaska............... 1727
Powooiliak Point, Alaska............... 2317
Prince of Wales I.. 1383,1385,1415,1555,1561
Prince Rupert, British Columbia... 1245-1291
Prince Rupert, Chatham Sound........... 1285
Prince William Sound, Alaska...... 1815-1881
Princeton Halfmoon Bay, Calif.......... 503
Principe Channel, British Columbia 1275-1279
Prisoners Harbor, Calif................ 467
Prisoners Point, Calif................. 705
Protection Point, Alaska............... 2281
Puale Bay, Alaska...................... 2027
Puerto Americano, Chile................ 97
Puerto Angel, Mexico................... 373
Puerto Angosto, Chile.................. 43
Puerto Armuelles, Panama............... 337
Puerto Barbara, Chile.................. 79
Puerto Barroso, Chile.................. 81
Puerto Bolivar, Ecuador................ 261
Puerto Chicama, Peru................... 247
Puerto de Cayo, Ecuador................ 269
Puerto de San Jose, Guatemala.......... 369
Puerto del Hambre, Chile............... 27
Puerto Flamenco, Chile................. 203
Puerto Gallant, Chile.................. 35
Puerto Henry, Chile.................... 75

No.

Puerto Herradura, Costa Rica........... 345
Puerto Italiano, Chile................. 93
Puerto Lagunas, Chile.................. 95
Puerto Lebu, Chile..................... 145
Puerto Low, Chile...................... 103
Puerto Melinka, Chile.................. 105
Puerto Montt, Chile * (12)............. 125
Puerto Penasco, Mexico................. 389
Puerto Queilen, Chile.................. 113
Puerto Quellon, Chile.................. 111
Puerto Quemchi, Chile.................. 117
Puerto Refugio, Chile.................. 87
Puerto San Antonio, Chile.............. 29
Puerto San Juan, Peru.................. 235
Puerto San Pedro, Chile................ 109
Puerto Slight, Chile................... 83
Puerto Somoza, Nicaragua............... 355
Puerto Tamar, Chile.................... 47
Puerto Vallarta, Mexico................ 381
Puerto Yana, Chile..................... 147
Puerto Yates, Chile.................... 89
Puerto Zenteno, Chile.................. 21
Puget Sound, Wash................ 1011-1077
Pukoo Harbor, Hawaii................... 2399
Puna, Ecuador.......................... 263
Punta Ancud, Chile..................... 51
Punta Arenas, Chile * (8).............. 25
Punta Catalina, Chile.................. 9
Punta Eten, Peru....................... 249
Punta Garachine, Panama................ 315
Punta Mala, Panama..................... 329
Puntarenas, Costa Rica * (48).......... 347
Pybus Bay, Alaska...................... 1615
Pyramid Harbor, Alaska................. 1655

Q

Qlawdzeet Anchorage, British Columbia.. 1283
Quartermaster Harbor, Wash............. 1039
Quatsino Sound, British Columbia....... 1243
Queen Charlotte Islands, B. C..... 1289,1291
Queule, Chile.......................... 139
Quepos, Costa Rica..................... 343
Quillayute River, Wash................. 957
Quintero, Chile........................ 177
Quivira Basin, Mission Bay, Calif...... 413

R

Rada Pichilemu, Chile.................. 165
Rada Quintay, Chile.................... 173
Rada Topocalma, Chile.................. 167
Rada Vallenar, Chile................... 91
Raspberry Strait, Alaska............... 2013
Rasp Ledge, Alaska..................... 1629
Rat Islands, Alaska.............. 2231-2237
Ratz Harbor, Alaska.................... 1415
Raven Bay, Alaska...................... 2125
Ravenwood Slough, Calif................ 587
Raymond, Wash.......................... 933
Red Bay, Alaska........................ 1561
Red Bluff Bay, Alaska.................. 1673
Redfox Bay, Alaska..................... 2017
Redonda Bay, British Columbia.......... 1185
Redwood City, Calif.................... 577
Redwood Creek entrance, Calif.......... 571
Redwood Creek Marker #8, Calif......... 569
Reedsport, Oreg........................ 825
Reid Bay, Sumner Strait, Alaska........ 1557
Reservation Bay, Wash.................. 1101
Resurrection Bay, Alaska............... 1885
Revillagigedo Channel, Alaska..... 1331-1345
Rich Passage, Wash..................... 1029
Richardson, Wash....................... 1131

No.

Richmond, Calif........................ 629
Riley Cove, British Columbia........... 1231
Rincon Point, Calif.................... 519
Rio Chepo, Panama...................... 319
Rio Chone, Ecuador..................... 273
Rio Imperial, Chile.................... 141
Rio San Juan, Colombia................. 301
Rio Santiago, Ecuador.................. 277
Rio Vista, Calif....................... 737
Rivers Inlet, British Columbia......... 1247
Robert Islands, Alaska................. 1621
Roberts Landing, Calif................. 545
Roca Remolinos, Chile.................. 127
Roche Harbor, Wash..................... 1143
Rocky Bay, Alaska...................... 1899
Rocky Point, Alaska.................... 1857
Rocky Point, Wash...................... 1073
Rogue River, Oreg...................... 809
Root Point, British Columbia........... 1207
Rosario, Wash.......................... 1125
Rosario Strait, Wash............... Page 176
Rose Inlet, Alaska..................... 1459
Rudyerd Bay, Alaska.................... 1361

S

Sacramento, Calif...................... 745
Sacramento River, Calif............ 733-745
Sadie Cove, Kachemak Bay, Alaska....... 1908
Sagchudak Island, Alaska............... 2171
Saginaw Bay, Alaska.................... 1619
St. Catherine Cove, Alaska............. 2089
Saint Helens, Oreg..................... 901
St. John Harbor, Alaska................ 1573
St. Johns, Oreg........................ 907
St. Lawrence Island, Alaska....... 2309-2319
St. Matthew Island, Alaska............. 2307
St. Michael, Alaska * (156)............ 2337
St. Paul Harbor, Alaska................ 1969
St. Paul Island, Alaska................ 2305
Sakie Bay, Alaska...................... 1485
Salina Cruz, Mexico * (56)............. 375
Salisbury Sound, Alaska.......... 1715,1717
Saltery Cove, Alaska................... 1399
Saltery Point, Alaska.................. 1469
Samoa, Calif........................... 799
San Antonio, Chile..................... 169
San Carlos, Mexico..................... 399
San Clemente, Calif.................... 419
San Clemente Island, Calif............. 457
San Diego, Calif * (64)................ 409
San Diego, Calif....................... 407
San Diego Bay, Calif............... 407-411
San Fernando Island, Alaska............ 1507
San Francisco Bar, Calif............... 507
San Francisco Bay, Calif........... 511-637
San Francisco (Golden Gate), Calif..... 513
San Francisco, North Point, Calif...... 517
San Joaquin River, Calif........... 701-731
San Juan Channel, Wash........... 1131,1133
San Juan Island, Wash........ 1133,1141,1143
San Juan del Sur, Nicaragua............ 357
San Leandro Channel, Calif............. 543
San Lorenzo, Ecuador................... 279
San Luis Obispo Bay, Calif............. 475
San Mateo Bridge, Calif............ 557,559
San Nicolas Island, Calif.............. 465
San Pablo Bay, Calif............... 639-657
San Pedro Channel, Calif........... 421-443
San Simeon, Calif...................... 479
Sanak Harbor, Alaska................... 2081
Sanak Islands, Alaska............ 2079,2081
Sanborn Harbor, Alaska................. 2047
Sand Bay, Alaska....................... 2181

No.
Sand Heads, British Columbia 1167
Sand Mound Slough, Calif 723
Sand Point, Alaska 2053
Sandy Point, Wash 1088
Santa Ana River, Calif 425
Santa Barbara, Calif 453
Santa Barbara Channel, Calif 445-455
Santa Barbara Island, Calif 463
Santa Barbara Islands, Calif 457-471
Santa Cruz, Calif 499
Santa Cruz Island, Calif 467
Santa Monica Bay, Calif 441,443
Santa Monica, Calif 443
Saratoga Passage, Wash 1088-1091
Sausalito, Calif 615,623
Sawmill Bay, Alaska 1843
Scraggy Point, Alaska 1717
Scotch Cap, Alaska 2095
Sea Otter Harbor, Alaska 1487
Sea Otter Sound, Alaska 1517,1527
Seabeck, Wash 1005
Seal Bay, Alaska 1947
Seal Cape, Alaska 2061
Seaplane Harbor, Calif 553
Seattle, Wash * (92) 1023,1025
Seclusion Harbor, Alaska 1587
Security Bay, Alaska 1675
Security Cove, Alaska 1479
Sedanka Island, Alaska 2129
Seguam Island, Alaska 2161
Segunda Angostura, Chile 19
Selby, Calif 669
Seldovia, Alaska * (124) 1907
Semiahmoo Bay, Wash 1139
Sequalitchew Creek, Wash 1055
Sequim Bay, Wash 975
Sergius Narrows, Alaska 1723
Settlement Point, Alaska 2067
Settlers Point, Oreg 883
Seward, Alaska 1885
Seymour Canal, Alaska 1629,1631
Seymour Narrows, British Columbia 1193
Shag Rock, Alaska 1815
Shakan, Alaska 1549
Shakan Bay Entrance, Alaska 1547
Shelter Cove, Calif 781
Shelton, Wash 1069
Shemya Island, Alaska 2239
Shoal Point, Alaska 2209
Shoals Point, Alaska 1707
Shoalwater Pass, Alaska 1357
Shrimp Bay, Alaska 1373
Shumagin Islands, Alaska 2045-2055
Shushartie Bay, British Columbia 1219
Shuyak Island, Alaska 1943,2019,2021
Shuyak Strait, Alaska 2017
Sidney, British Columbia 1155
Siletz Bay, Oreg 845
Siletz River, Oreg 847
Sitka, Alaska * (112) 1701
Sitka Sound, Alaska 1699-1705
Sitkalidak Island, Alaska 1975
Sitkinak Lagoon, Alaska 1981
Siuslaw River, Oreg 827,829
Skagit Bay, Wash 1093-1099
Skagway, Alaska 1659
Skamokawa, Wash 887
Skan Bay, Alaska 2115
Skidegate Inlet, British Columbia 1289
Skowl Arm, Alaska 1399
Slingsby Channel, British Columbia 1245
Slocum Arm, Alaska 1737
Smeaton Bay, Alaska 1355
Smith Island, Alaska 1849

No.
Smith Island, Wash 979
Smith Slough, Calif 581
Smuggler Cove, Hawaii 2415
Snag Point, Alaska 2285
Snug Corner Cove, Alaska 1851
Snug Harbor, Alaska 1845,1937
Soda Bay, Alaska 1475
Sonoma Creek, Calif 655,657
Sooke, British Columbia 1149
South Bay Wreck, Calif 573
South Bend, Wash 931
South Bight, Alaska 2231
South Colby, Wash 1035
South Inian Pass, Alaska 1765
South Pass, Sukkwan Strait, Alaska 1467
South San Francisco, Calif 547
Southbeach, Oreg 837
Southeast Farallon Island, Calif 505
Spruce Island, Alaska 1963,1965
Squamish, British Columbia 1173
Stag Bay, Alaska 1747
Stanwood, Wash 1087
Steamboat Bay, Alaska 1509
Steamer Bay, Alaska 1423
Steilacoom, Wash 1051
Stella, Wash 895
Steller Cove, Alaska 2249
Stephens Passage, Alaska 1621-1647
Stepovak Bay, Alaska 2043
Stewart, British Columbia 1329
Stikine River, Alaska 1431
Stillaguamish River, Wash 1087
Stockton, Calif 711
Strait of Georgia, Wash 1135,1139
Strait of Juan de Fuca, Wash 961-981
Strawberry Bay, Wash 1113
Stuart Island, Alaska 2339
Stuart Island, Wash 1145
Suemez Island, Alaska 1501
Suisun Bay, Calif 677-699
Suisun City, Calif 683
Suisun Point, Calif 675
Suisun Slough entrance, Calif 677
Sukkwan Island, Alaska 1461
Sulzer, Alaska 1453
Sumner Island, Alaska 1559
Sumner Strait, Alaska 1537-1575
Sunrise, Alaska 1925
Surge Bay, Alaska 1753
Swanson Harbor, Alaska 1781
Sweeper Cove, Alaska * (144) 2193
Swinomish Channel, Wash 1093,1109
Symonds Bay, Alaska 1699

T

Table Bay, Alaska 1667
Taboga, Panama 325
Tachikuga Bay, Alaska 2321
Tacoma, Wash 1043
Taft, Oreg 845
Tah Bay, Alaska 1435
Takanis Bay, Alaska 1751
Takoma Cove, Alaska 1897
Taku Harbor, Alaska 1637
Taku Inlet, Alaska 1639,1641
Talara, Peru * (32) 255
Talcahuano, Chile 153
Taltal, Chile 207
Tamgas Harbor, Alaska 1381
Tanaga Bay, Alaska 2221
Tanaga Island, Alaska 2217-2223
Tanager Point, Alaska 2183
Tarlatt Slough, Wash 925

No.
Tasu Sound, B. C. 1291
Tatitlek Narrows, Alaska 1855
Tatoosh Island, Wash 961
Tebenkof Bay, Alaska 1671
Tenakee Inlet, Alaska 1693
Tenakee Springs, Alaska 1693
Tepoca Bay, Mexico 393
Terminous, Calif 715
Thatcher Pass, Wash 1111
The Summit, Alaska 1591
Thomas Bay, Alaska 1609
Thorne Island, Alaska 1419
Three Arm Bay, Alaska 2203
Threemile Slough entrance, Calif 703,735
Three Saints Bay, Alaska 1977
Three Star Point, Alaska 2035
Tierra del Fuego 1-5
Tigalda Bay, Alaska 2097
Tigalda Island, Alaska 2097
Tillamook, Oreg 859
Tillamook Bay, Oreg 851-859
Tlevak Narrows, Alaska 1477
Tlevak Strait, Alaska 1459-1477
Tocopilla, Chile 219
Toke Point, Wash 929
Toledo, Oreg 843
Tomales Bay, Calif 753
Tongass Island, Alaska 1311
Tongass Narrows, Alaska 1349,1351
Tonki Bay, Alaska 1949
Tonowek Bay, Alaska 1513
Topolobampo, Mexico 387
Totten Inlet, Wash 1071
Tracyton, Wash 1033
Traitors Cove, Alaska 1375,1377
Treadwell Bay, British Columbia 1245
Trident Bay, Alaska 2099
Trinidad Harbor, Calif 803
Tuktoyaktuk, Arctic Ocean 2355
Tulalip, Wash 1083
Tumaco, Colombia 295
Turn Island, B. C. 1197
Turn Point, Wash 1145
Turnagain Arm, Alaska 1925
Tutka Bay, Alaska 1906
Tuxedni Channel, Alaska 1935
Tuxekan Passage, Alaska 1519-1523
Twin Rivers, Wash 967
Two Arm Bay, Alaska 1889
Tyndall Glacier, Alaska 1803

U

Udagak Strait, Alaska 2131
Udamat Bay, Alaska 2129
Ugak Bay, Alaska 1973
Uganik Bay, Alaska 1997-2001
Uganik Passage, Alaska 2001
Ukolnoi Island, Alaska 2063
Ulak Island, Alaska 2229
Ulloa Channel 1495-1499
Ulloa Island, Alaska 1495
Umnak Island, Alaska 2137-2149
Umpqua River, Oreg 821-825
Unalaska, Alaska 2111
Unalaska Island, Alaska 2107-2133
Unalga Bight, Alaska 2205
Unalga Island, Alaska 2105
Unga Island, Alaska 2055
Unimak Island, Alaska 2083-2095
Union, Wash 1009
Union Bay, Alaska 1411
Upper Guadalupe Slough, Calif 603
Upright Head, Wash 1127

No.
Ushagat Island, Alaska 1901
Usof Bay, Alaska 2127
Uyak, Alaska 1989
Uyak Bay, Alaska 1989-1995
Uzkosti Point, Alaska 2011

V

Valdez, Alaska * (120) 1861
Valdez Arm, Alaska 1855-1861
Valdivia, Chile 137
Vallenar Point, Alaska 1359
Valparaiso, Chile * (16) 175
Vancouver, British Columbia * (100) 1171
Vancouver, Wash 911
Vancouver Island 1149-1243
Vaughn, Wash 1061
Ventura, Calif 449
Victoria, British Columbia * (96) 1153
Viekoda Bay, Alaska 2003
View Cove, Alaska 1465
Village Cove, Alaska 2305
Village Islands, Alaska 1997

W

Waddington Harbor, British Columbia 1189
Wadhams, British Columbia 1247
Waialula Bay, Hawaii 2377
Waianae, Hawaii 2379
Waikane, Hawaii 2389
Waimanalo, Hawaii 2385
Waimea Bay, Hawaii 2367
Waldport, Oreg 831
Wales Island, Alaska 1317
Walkers Landing, Wash 1065
Walrus Islands, Alaska 2287
Ward Cove, Alaska 1351
Wards Island, Calif 707
Warehouse Creek, Alaska 2295
Warm Chuck Inlet, Alaska 1513
Warm Spring Bay, Alaska 1677
Warrendale, Oreg 917
Warrenton, Oreg 875
Washington 865-1147
Washougal, Wash 915
Waterfall Cannery, Alaska 1497
Wauna, Oreg 891
Wauna, Wash 1049
Wedderburn, Oreg 809
Wells Passage, Alaska 1869
West Point Slough, Calif 579
Westport, Calif 779
Westport, Wash 937
West Thurlow Island, B. C. 1199
Whale Bay, Alaska 1697
Whale Channel, British Columbia 1265
Whale Island, Alaska 1957
Whale Passage, Alaska 1419
Whaletown, British Columbia 1181
Whiskey Slough, Calif 727
Whitestone Narrows, Alaska 1711
Whitewater Bay, Alaska 1679
Whitney Island, Alaska 1613
Whittier, Alaska 1873
Wiah Point, British Columbia 1295
Wide Bay, Alaska 2031
Willamette River, Oreg 907,909
Willapa Bay and River, Wash 921-933
William Henry Bay, Alaska 1653
Willoughby Island, Alaska 1785
Wilson Cove, Calif 457
Winant, Oreg 841
Windfall Harbor, Alaska 1631

No.
Windham Bay, Alaska.................... 1627
Windy Bay, Alaska...................... 1823
Wingham Island, Alaska................. 1805
Wingo, Calif........................... 657
Woewodski Island, Alaska............... 1577
Womens Bay, Alaska..................... 1971
Wood Spit, Alaska...................... 1633
Wrangell, Alaska....................... 1429
Wrangell Island, Alaska................ 1429
Wrangell Narrows, Alaska.......... 1577-1583
Wright Sound, British Columbia......... 1267

Y

Yakobi Island, Alaska............. 1751,1753
Yakutat Bay, Alaska.................... 1799
Yaquina, Oreg.......................... 839
Yaquina Bay, Oreg.................. 833-843
Yaquina River, Oreg................ 833-843

No.
Yerba Buena Island, Calif.............. 521
Yes, Yes Bay, Alaska................... 1371
Yokeko Point, Wash..................... 1097
Yuculta, British Columbia.............. 1187
Yukon Harbor, Wash..................... 1035
Yukon River, Alaska............... 2329-2333
Yunaska Island, Alaska............ 2155,2157

Z

Zachar Bay, Alaska..................... 1995
Zachary Bay, Alaska.................... 2055
Zapallar, Chile........................ 179
Zarembo Island, Alaska................. 1573
Zeal Point, Alaska..................... 1713
Zelatched Point, Wash.................. 1003
Zimovia Strait, Alaska................. 1425
Zorritos, Peru......................... 259

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ASTRONOMICAL DATA, 1987

January

	d.	h	m
E	5	22	..
◐	6	22	34
A	13	05	..
N	13	06	..
○	15	02	30
E	20	16	..
◑	22	22	45
S	27	03	..
P	28	11	..
●	29	13	44

February

	d.	h	m
E	2	06	..
◐	5	16	21
N	9	12	..
A	9	16	..
○	13	20	58
E	16	21	..
◑	21	08	56
S	23	11	..
P	25	16	..
●	28	00	51

March

	d.	h	m
E	1	16	..
◐	7	11	58
N	8	19	..
A	9	10	..
○	15	13	13
E	16	03	..
⊙1	21	03	52
◑	22	16	22
S	22	17	..
P	24	19	..
●	29	12	46
E	29	02	..

April

	d.	h	m
N	5	03	..
A	6	07	..
◐	6	07	48
E	12	12	..
○	14	02	31
P	18	17	..
S	18	23	..
◑	20	22	15
E	25	09	..
●	28	01	34

May

	d.	h	m
N	2	11	..
A	4	02	..
◐	6	02	26
E	9	21	..
○	13	12	50
P	15	23	..
S	16	05	..
◑	20	04	02
E	22	15	..
●	27	15	13
N	29	18	..
A	31	18	..

June

	d.	h	m
◐	4	18	53
E	6	05	..
○	11	20	49
S	12	14	..
P	13	01	..
◑	18	11	02
E	18	19	..
⊙2	21	22	11
N	26	00	..
●	26	05	37
A	28	04	..

July

	d.	h	m
E	3	12	..
◐	4	08	34
S	10	00	..
○	11	03	33
P	11	10	..
E	16	02	..
◑	17	20	17
N	23	05	..
A	25	08	..
●	25	20	37
E	30	17	..

August

	d.	h	m
◐	2	19	24
S	6	10	..
P	8	19	..
○	9	10	17
E	12	10	..
◑	16	08	25
N	19	10	..
A	21	14	..
●	24	11	59
E	26	22	..

September

	d.	h	m
◐	1	03	48
S	2	18	..
P	6	03	..
○	7	18	13
E	8	20	..
◑	14	23	44
N	15	17	..
A	18	03	..
●	23	03	08
E	23	05	..
⊙3	23	13	45
S	30	00	..
◐	30	10	39

October

	d.	h	m
P	4	01	..
E	6	06	..
○	7	04	12
N	13	01	..
◑	14	18	06
A	15	21	..
E	20	13	..
●	22	17	28
S	27	05	..
◐	29	17	10
P	30	03	..

November

	d.	h	m
E	2	14	..
○	5	16	46
N	9	10	..
A	12	18	..
◑	13	14	38
E	16	21	..
●	21	06	33
S	23	12	..
P	24	15	..
◐	28	00	37
E	29	20	..

December

	d.	h	m
○	5	08	01
N	6	17	..
A	10	14	..
◑	13	11	41
E	14	05	..
●	20	18	25
S	20	21	..
⊙4	22	09	46
P	22	11	..
E	27	00	..
◐	27	10	01

LUNAR DATA:
● - new Moon
◐ - first quarter
○ - full Moon
◑ - last quarter
A - Moon in apogee
P - Moon in perigee
N - Moon farthest north of Equator
E - Moon on Equator
S - Moon farthest south of Equator

SOLAR DATA:
⊙1 - March equinox
⊙2 - June solstice
⊙3 - September equinox
⊙4 - December solstice

Greenwich mean time (GMT) or universal time (UT) is the mean solar time on the Greenwich meridian reckoned in days of 24 mean solar hours written as 00 at midnight and 12 at noon. To convert the above times to those of other standard time meridians, add 1 hour for each 15° of east longitude of the desired meridian and subtract 1 hour for each 15° of west longitude.

This table was compiled from data supplied by the Nautical Almanac Office, United States Naval Observatory.